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ABSTRACT

Criteria by which an organization should select a vendor-supplied training program and the measurement and rating of programs against such selection criteria are described. A review of the pertinent literature and research, from a theoretical rather than practical perspective, is included. Factors and criteria identified in the literature as important to evaluating a vendor-supplied program can be clustered around four dimensions: (1) content factors and their fit to the needs of the organization; (2) design factors and their utilization in the program; (3) control factors and the research and evaluation supporting the program; and (4) context factors and the fit of this program into the administrative aspects of the purchasing organization. A checklist of the identified criteria in these areas was created and used to develop an instrument with worksheets to compare the program under consideration to the model. Use of an instrument of this type would help ensure that programs were purchased on their merits and that flaws would be more readily apparent. Costs of training might drop and the importance of training would be enhanced in the organization. A 134-item list of references is included. Forty-seven figures illustrate process flowcharts and the worksheets for program evaluation. (SLD)

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TRAINING AND DEVELOPMENT RESEARCH CENTER

Project Number Thirty-One

A THEORETICAL MODEL AND INSTRUMENT FOR SELECTING VENDOR-SUPPLIED TRAINING PROGRAMS

Timothy R. McClernon
January 1989

university of minnesota
DEPARTMENT OF VOCATIONAL AND TECHNICAL EDUCATION • ST. PAUL, MINNESOTA

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CHAPTER ONE -- INTRODUCTION

When organizations use outside sources to meet their training requirements, managers and training professionals are required to make intelligent, rational, and informed decisions about which training program would work best in their situations. Yet, processes and guidelines that can be used to assist people in making such decisions have not been well defined. If this decision-making process could be improved, a notable increase in return on investment for training professionals would result, and the role of training program buyers would be enhanced. This investigation will study the criteria and methodology used when managers/trainers decide which vendor-supplied training programs to evaluate and select.

The process of evaluating training programs receives increased emphasis as training in a corporation becomes more closely aligned to the organization's strategic plans. A review of the literature shows that the emphasis in evaluation research has been placed on the factors involved in evaluating training after it has been delivered. For example, Kirkpatrick's four-step evaluation hierarchy of reaction, learning, behavior, and results reflects an outcome orientation for evaluating training (1975, 1976, 1983). The focus of the previous research on training effectiveness and outcomes and the more recent emphasis on cost-benefit analysis (see Swanson & Gradous, 1988) represent critical elements in substantiating the legitimacy of the emerging training and

development field and the credentials of the training and development professional. Although much has been accomplished, the history of evaluation in training suggests that considerably more effort is required to improve the decision-making processes used in selecting, designing, developing, implementing, and evaluating training programs.

Goldstein noted that despite important recent advances in the development of evaluation models, "the most serious problem has been the failure even to consider examining the instructional methods" (1986, pp. 112-113). Brinkerhoff (1987) further stated:

> There are many reasons to be concerned with evaluating HRD programs as they happen, well before they have had a chance to produce results. In fact, to look for effects only after the program is to perpetuate trial-and-error learning. If evaluation during the early developmental stages can show that a program is ill conceived or poorly executed, then there may be a good reason to revise or even abort it. Evaluation made a part of the program development process can help programs succeed, as well as measure whether or not they do. (p. 66)

Purposes of the Study

This study considers selection criteria for choosing a vendor-supplied training program and describes how to measure and rate programs against identified selection criteria. A review of the pertinent literature and research is included. The identified criteria are organized into an evaluation model and instrument that can be used to guide the buyer in selecting vendor-supplied training programs.

The methodology by which this investigation was accomplished includes: (a) reviewing the literature, (b) identifying selection criteria for evaluating vendor-supplied training programs, (c) creating a model for the selection of vendor-supplied training programs, (d) creating an instrument and methods for gathering information based on the model, and (e) making conclusions and recommendations for further investigation. The outcomes of this study are a model and an instrument that can be used when managers/trainers compare alternative training programs before purchasing a pilot program.

Definition of Terms

Because a variety of terms have been used by various individuals and organizations to describe certain elements in the field of training, the subsequent definitions will serve to clarify the terminology used for this investigation.

Program refers to a course, package, class, or similar item related to the training of individuals in organizations.

Vendor refers to any source external to the purchasing department or company that offers a program for use in training personnel. Vendor refers to the company or individual who offers the program to the purchasing organization in exchange for money. The exchange of money does not affect the model or this investigation, other than to serve as a criterion to be considered. Thus, the word vendor will be used synonymously with phrases such as external source, supplier, and outside provider.

External source could include sources other than vendors, and it refers to the source of any program purchased for the purpose of training, regardless of where the training will be held or who will provide the training. For example, the source of the program might be another division of the same organization. In this investigation, the focus is on evaluating programs that have been developed outside the purchasing organization. In this paper, it makes no difference where the program originated or the terms of the exchange, although the decision maker may consider both the program originator and the terms of the exchange as important criteria.

Criterion refers to a measure against which some aspect of a program might be evaluated.

Dimension refers to a set of criteria that have some element in common. For example, the "content dimension" would consist of a number of criteria that could be considered in evaluating a program's content.

Purchasing organization refers to the organization that will use the program. It may refer to a department, a company, a division, a customer, or an individual, depending on the scope of the intended use of the program under consideration.

Decision maker refers to the person (or group of individuals) who makes the decision or recommendation concerning the training need in question. The decision maker could be the training manager, an experienced designer, an instructor of

training programs, a line manager, or any concerned person (or group of people) involved in the evaluation process.

Statement of the Problem

The use of vendor-supplied programs in training is increasing. Training magazine's 1987 industry report revealed that the dollars spent on vendor-supplied services and materials increased by 12.2 percent during the preceding year. Almost $7 billion was budgeted by training departments for external purchases for 1987 (Lee, 1987a). Over $4 billion of that $7 billion was budgeted for off-the-shelf materials, seminars, conferences, and customized materials (Geber, 1987).

A study in the May 1985 issue of Performance and Instruction Journal reported that 42 percent of the companies surveyed (n = 88) developed less than 25 percent of their training materials and programs in-house. Another 14 percent developed less than half of their training in-house (Schoonmaker, 1985). Based on this study, over one-half of the training provided by these companies originated from external sources. Although the validity of the study may be open to question, the overall results indicate increased use of external sources in the training industry.

Thus, studying the decision-making process by which managers select external training programs is important. An increased understanding of the criteria used to evaluate and compare external programs must be explored in order for managers to make wise and effective purchasing decisions. Practical criteria by which to

evaluate and compare the programs can be gathered and formatted into a useful selection model for decision makers in organizations.

Research has been and is being conducted on both the evaluation processes used to determine a training program's effectiveness and on a method to develop cost-benefit analysis of training programs. This study will not focus on these areas of training evaluation; instead, it will focus on the criteria that are critical for making an informed and wise selection of pre-existing and customized programs. Given a number of programs that could potentially meet a set of identified training needs, a method for evaluating each program before it is piloted or purchased will be identified.

Significance of the Problem

Increasingly, training managers are being held responsible for decisions that affect the bottom-line results of their organizations. The effectiveness of the training function may provide the difference between success and failure for certain positions and responsibilities. For example, as markets become more competitive, well-trained sales people can make the critical difference between obtaining, holding, or losing an account. As work technology changes, training people efficiently and effectively in specific, new skills may be a critical element in a company's ability to adapt strategically to and compete in a competitive marketplace.

Decisions to use a vendor's program can include a substantial commitment on the part of the buyer in terms of money, time, personnel, and professional credibility. Making better decisions

concerning the purchases of vendor-supplied training programs could result in increased benefits for the organization and the decision-maker. Similar to other capital expenditures, training represents an investment in the organization's future. To maximize the return on the training investment, the decision maker needs to consider each required aspect of the vendor's program.

As the strategic importance of training increases, the decisions of training managers are being scrutinized more carefully by others in the organization. As training expenditures increase, top management may require more justification and analysis before approving training expenditures. Therefore, a format to aid training buyers in making better selections and justifying their decisions to purchase or to use pilot programs can be helpful.

An examination of the decision-making process could provide a systematic methodology by which to make such decisions. An individual trainer may make a series of one-time purchasing decisions, but by creating and substantiating a selection model, a system can be set up to guide future decisions. For a buyer, having a system could lead to better decisions and the outlay of less time and energy. Such a system could be personalized to fit the unique needs of the organization, and improvements could be incorporated into it, increasing its effectiveness over time.

The results of this investigation could be of interest to training vendors, buyers, managers concerned about the value of vendor-supplied training programs, and training and development researchers. The selection model could provide a comprehensive set

of criteria for decision makers to use when evaluating vendor-supplied training programs, thereby improving their selection process. Internal developers of training programs could benefit from using the methodology as an evaluation tool. Vendors could use the selection model to evaluate their programs before offering them on the market, and their marketing approaches could be changed to provide the information the buyer requires to make an informed decision. Managers can use the system to arrive at a more rational decision in making and approving training purchases. The trainer can use the selection model to provide the background for his or her recommendations to management.

The significance of this study is also affected by managers' perceived purposes of the evaluation process. Certainly, one purpose of evaluation is to help the manager make go/no-go decisions, such as whether or not to continue a particular program, to buy inside or outside, or to develop new programs. Another purpose of evaluation is to provide data concerning the ongoing effectiveness and results of the program. The program evaluation selection process that is the focus of this investigation could also provide the data required to improve existing programs, whether they are developed internally or externally. Besides providing the information required for a go/no-go decision, the instrument and model may represent a valid process for identifying specifically what is required to adapt or customize an outside vendor's product for the buyer's unique requirements. By using this method of evaluation, the decision

maker may uncover previously unknown concerns and needs, and these could be incorporated into the selection process.

Major Research Questions

In this study, it is assumed that the criteria by which programs are compared can be identified and that these criteria can be organized to provide a method for systematically scoring alternative programs; this permits the buyer to make a more informed, more intelligent, and less biased decision. Although it is acknowledged that decisions to purchase training programs do not necessarily follow a rational process, it is assumed that using a more rational process will result in a more effective decision.

The following major research questions will be investigated as a means of pursuing the stated problem: (a) What selection criteria can be used to evaluate external training programs before they are pilot-tested or implemented? (b) What effective, efficient, and objective methods have been identified for measuring each of the above criteria? and (c) Can these criteria be organized logically into a useful selection model and instrument?

CHAPTER TWO -- REVIEW OF THE LITERATURE

Little has been written about the decision-making process used in selecting vendor-supplied training programs. Of the literature that exists, none is based on quantitative research. More has been written about the process used in developing programs. The literature on program development and evaluation may serve as the basis for identifying factors to use in evaluating and selecting pre-existing programs. Here, issues associated with various program components, the evaluation of training programs, the development of in-house programs, the purchase of outside programs, and the decision-making process are considered. Finally, covered in this review is information concerning where the decision maker can find out about vendor-supplied training programs.

The reasons an organization can have for using an outside source to fill a training need and the criteria by which an organization selects a program are not mutually exclusive. For this study, a review of the literature concerning reasons an organization would have for purchasing training outside versus developing it in-house will be considered first, and the literature concerning selection criteria will be considered second.

Build In-House or Purchase From An Outside Source

Changes in the perceptions of organization, work, and workers have resulted in comparable changes in the focus of the training function within organizations. For example, as quality has become an issue of strategic importance to businesses, the importance of training employees in the use of statistical process control systems

has increased. Some of these changes have resulted in companies' relying on external sources for program development. What factors influence the decision to develop a program in-house as opposed to obtaining it from an outside source?

An organization's decision to purchase a program from an outside source is rarely obvious (Cothran, 1987). Rather, as in the evaluation process in general, decisions emerge out of a process that includes various individuals' input, such program factors as cost and availability, and other organizational considerations.

Benefits associated with designing a program in-house include a greater amount of control over factors such as quality, content, scheduling, materials, media, selection of instructors, and the learning perspective taken in the program. The development process may provide opportunities for individuals from different departments and disciplines to interact, resulting in better working relationships and facilitating learning on the issues involved in the program (Kirkpatrick, 1985b). The applicability of the program to a particular organization can be developed from the beginning of the process. Cultural values that are important to the organization and assumptions concerning previous learning experiences of the trainees can be incorporated into the program development process, starting with the program's conception.

On the other hand, external programs may offer several benefits that in-house packages do not. Four hundred and thirty-three respondents to a survey of business people on what criteria are important to consider when deciding to buy training outside

rather than to develop it inside revealed that half of them rated the range of resources available as the most important criterion. Other criteria they selected as important included quality of the end product (43%), speed of delivery (34%), cost (34%), capability of outside vendors' personnel (33%), and unique technology (27%) (Lashbrook, 1981a, 1981b). Despite limitations of Lashbrook's study regarding the variety and selection of subjects and a possible bias toward the vendor's perspective, this investigation considers the results of her study in greater depth.

Organizational Capability

A range of resources, capability of training personnel, and unique technology can be combined into an overall factor concerning the organizational capability of the vendor. This, then, is the main reason for the decision to buy outside (Lashbrook, 1981a). Some training programs may require greater in-depth knowledge, skills, or technology than are available within the purchasing organization. Lacking internal resources, the decision maker must choose an outside source that has the expertise to develop the program.

Certain types of training and certain issues may be better presented and designed by outside vendors. If a training issue could be met with a great amount of resistance by the participants, thus, representing a high political risk for the training department, an outside source may provide a safe alternative to minimize the potential negative political outcomes. The "Cassandra" effect may be operative; that is, internal prophets will not be believed despite their qualifications, yet an external source could provide the

credence required to make the training successful (Cantwell, Hosterman, & Shelton, 1976).

When technical expertise exists within the organization, there could be a tendency to decide prematurely to develop the training in-house, without adequate consideration of other factors. Technical expertise is only one aspect of the decision maker's choice.

> No firm decision regarding the type, format, or source of training should be made unless sufficient attention has been given first to identification of the trainee population and the establishment of instructional objectives; and even with this attention, the decision will be obscured by factors which may have little to do with training. The trainer needs to consider each of these factors carefully. (Cantwell et al., 1976, p. 47-5)

Of course, the proprietary nature of tightly controlled or sensitive information may be an important factor in some instances (Cothran, 1987).

Custom Designing

According to Lashbrook (1981a), the single most important factor in choosing an outside source was the vendor's ability to customize programs (20% of the respondents). This adds to the importance of the overall capability of the vendor. Buyers want a program that is adapted to the unique needs of their organization, and they will often consider the vendor's capacity to customize the program the most critical element in selecting a vendor.

Ability to Deliver

The quality of the end product and speed of delivery can be considered as the external resource's ability to deliver. Since these were rated as the second and third most important criteria

considered when buying an outside program, the vendor's ability to deliver is also a very important consideration (Lashbrook, 1981a). Because quality was rated higher than cost, it appears that organizations are clearly interested in purchasing programs that accomplish their objectives rather than purchasing programs solely according to their cost. Quality was more important to respondents who were actual decision makers or who spent a higher proportion of their budget on outside sources (Lashbrook, 1981a).

Time constraints are another important consideration in choosing an external program. Larger companies with larger training budgets are more likely to be concerned about delivery than are other buyers. The ability to provide the training at the most cost effective time when it will produce maximum results for the organization could result in greater overall cost savings, even though the program itself may be more expensive. Thus, timing may be the primary decision factor. In order to build a program internally, training personnel must research the program, develop it, evaluate a pilot, and, if necessary, revise it. Because of time constraints, training personnel may use external sources to meet their internal timing needs.

Cost

It might be assumed that cost is the most important reason why decision makers turn to external sources for training programs. Yet cost ranked fourth in this survey. The people actually responsible for making a buying decision rated cost higher than did the people involved in a less direct manner in the buying process.

Large companies were more concerned with cost than were small companies. The real issue with cost is probably cost effectiveness (Lashbrook, 1981a). Other factors, such as the number of employees being trained and the projected work load of the internal design team, may raise or lower the importance of the cost factor.

Cost considerations are rarely of the nature of simply buying the best program. Considerations such as the vendor, the content, the potential fit within the organization, the possibility of customization, and budget limitations must be balanced against the cost to achieve the best choice requiring the least money. Training program buyers should be prepared to argue that one particular program is the best choice, not because it is the least expensive, but because it is the most cost effective program, given the many factors affecting the program's success (Brinkerhoff, 1987).

Other Considerations

Because of the unpredictability of their market, many organizations use external resources, such as independent contractors and consultants, to maintain more flexibility with their internal work force. Thus, the people power required to meet a newly defined training need may not exist within the organization. Therefore, an organization that lacks the training personnel needed to develop a new training program may use an external source rather than hire new employees.

Summary

Sredl and Rothwell (1987) identified several criteria that could influence the "build or buy" decision. They asked a question

concerning when alternatives to formal, in-house instruction should be considered, and offered the following considerations:

1. Purpose. Is the experience largely intended to keep learners abreast of changes outside the organization? If so, external offerings are most suitable because learners will encounter many different people from other organizations.
2. Specificity of treatment. Is the experience intended to be tied to the unique policies, procedures, and methods of the organization? If so, external offerings will not be appropriate because they rarely take such specifics into account.
3. Size of the group affected. Is the need limited to one person or a few people? If so, alternatives to in-house, formal training should be considered. In most cases, formal in-house training should focus on recurring needs--like the job orientation of new employees.
4. Available expertise. Is necessary expertise available in-house? If not, alternative sources of instruction should be considered.
5. Importance of the work group. How important is it that the learning experience take into account the unique norms and status hierarchy of one or more work groups in the organization?
6. Cost-benefit ratio. Is it more cost beneficial to send people out, design in-house instruction, or use some other method to meet a need?
7. Policies. Is a subject for instruction too sensitive or potentially explosive to be handled effectively in-house? If so, alternatives to in-house instruction might be more appropriate.
8. Necessary integration with other experience. Is it important that a learning experience fit precisely into a larger structure or sequence of related programs, most of which were designed in-house? (pp. 92-93)

These considerations combined with the issues concerning the vendor's capability and resources, expertise, cost, and delivery time frame provide a comprehensive list of the factors found in a

decision to use an outside vendor rather than to develop an in-house program.

Selecting Vendor Training Programs

Several sources directly concerned with the selection of vendor-supplied training programs were identified. Each of the sources is reviewed, a summary is made of the common features, and comments are made concerning the differences. The initial focus is on the criteria that are important to selecting a program, not the criteria used in the decision on whether or not to use an outside supplier.

Rogers and Volpe (1984) created a five-level, no-nonsense, common-sense model that considered the following:

Level 1: Weeding out junk mail. Quickly assess the value of promotional literature using the following standards:

a. Are there any stated learning objectives?
b. Is the training performance-based (that is, does it promote skills rather than attitudes)?
c. Is there a topical outline of the program?
d. Does it seem to have more substance than simply a smart marketing attempt?

Level 2: Taking a closer look. Obtain the following from the firm selling the package:

a. Detailed content outline
b. Participant materials
c. Sample of program
d. Instructor information
e. Testimonials from other companies
f. Cost breakdown

Level 3: Building a comparison matrix. Compare the specifics of the program to your actual training needs to see how the

two match up. Compile a simple matrix, in which your training needs are compared against the topics that the program claims to address.

Level 4: Instructional design analysis. This level involves a detailed instructional design analysis. It is here that you approach the program from an instructional design standpoint. Using a top-notch instructional designer on staff or an outside consultant, you would touch on the following design issues:

a. Do objectives and content match with needs analysis?
b. Is there internal consistency among instructional objectives, criterion tests, and learning activities?
c. Are prerequisite skills identified? Are they congruent with the target population?
d. Is the sequence of instruction based on Gagne's learning hierarchies?
e. Is the instructional strategy appropriate?
f. Are complete and adequate instructional activities provided for each lesson?

Level 5: Running the pilot. Evaluate the program while the pilot is in session based on the specific instruments you have made along the way. (pp. 18-21)

Emphasizing the organizational factors over the program characteristics resulted in the following eight-step model by McDevitt (1983):

1. Determine relevant organizational factors.

   Look at: Objectives
   Authority structure and style
   Climate
   Training history

2. Examine your training objectives.

Are your objectives congruent with organization's objectives?

Look at: Nature of training problem
Trainee characteristics
Potential benefits to organization

3. Examine vendor program objectives.

Are they clear and defined in behavioral terms?
Can they be measured?
Do they match closely your training objectives?

4. Contact other vendor program users.

Look at evaluations from comparable organizations

5. Research vendor program.

Contact local business schools
Examine written reviews

6. Examine methodology.

Look at: Methodology of the program
Methodology that has been successful for your organization

7. Decide on vendor program.

Choose from alternatives
Have decision reviewed by colleagues
Sample the program, if possible

8. Do post-program evaluation and share the results.

Write review or document evaluation results for others (p. 83)

Cantwell, Hosterman, and Shelton (1976) discuss two key issues associated with the selection decision: competence in

subject matter and instructional design. Both issues must be addressed in the selection process. The rationale for valid subject matter in a training program is critical, but no less important is the design and execution of the program.

> The prospective external resource should be able to document specific instructional objectives, a rationale for how the instructional activity relates to the objectives, and criterion tests which will indicate whether the student can perform as intended. (Cantwell et al., 1976, p. 47)

Each of these elements should be considered as selection criteria.

A different perspective on selecting and evaluating vendor supplied training programs was presented in McAllaster's doctoral thesis (1987). He assessed vendor-produced, off-the-shelf programs according to how they conformed to the dimensions of: adult learning principles, program development models, and teaching methods. He used a case-study method and interviewed vendors from three companies, program participants, and instructors. His conclusions showed that each of the three programs reflected an awareness of selected adult learning principles, and a program development model was considered when they were designed. However, the programs required modifications based on program design, development, and instruction before they could be implemented by the purchasing organization.

In terms of teaching methods, a potential problem existed between what the vendors claimed and what the actual requirements were for implementing the training in a company setting. The vendors' literature and sales efforts indicated that almost anyone in

the company could be an instructor. However, the trainer-training did not provide or address the prerequisite skills required for an instructor: the ability to (a) understand adult learners, (b) modify programs, and (c) evaluate them. In effect, the instructor was the critical element in making the generic materials and activities of the program relevant to the company and the participants. The effectiveness of the training was highly dependent on the instructor's skill and abilities.

In addition, McAllaster considered how the programs were used within a company setting and what effect organizational factors had on each program's effectiveness. His results indicate that management support for the training was the most important organizational element for ensuring the training program's success.

> Without active management support throughout the organization any training program is in for a difficult, if not impossible, time. Just paying vendors' invoices, providing time away from work, lost productivity, and travel expenses does not guarantee that a company will benefit from a management development program. (McAllaster, 1987, p. 266)

In order for it to be effective, the training must be related to the business, the culture, and the environment of the organization.

In conclusion, a set of guidelines for assessing vendor programs was given. In this case study, the purchasing company failed to assess clearly what had to be accomplished with the vendor program before the decision was made. Thus, the first set of guidelines addressed the following factors associated with the program's purpose and organizational fit:

A. Assessment of Internal Requirements

1. Formulation of the Problem
2. Identification of the Program Goals
3. Determination of Goal Congruency
4. Determination of Management Support
5. Identification of Internal Resources
(McAllaster,1987, p. 271)

The second set of guidelines assessed the vendor's program on the basis of the following factors:

B. Reviewing Vendor Programs
1. Program Goals
2. Program Material and Activities
3. Instructor's Role
4. Evaluation Methodologies
5. Client Support Services
6. Follow-Up Programming Possibilities
(McAllaster, 1987, p. 271)

Together these guidelines are intended as a complete list of factors to consider when buying a vendor program. Whether using these guidelines would result in more effective purchasing decisions was not researched in this study.

Information regarding the selection criteria identified by Lashbrook (1981a) in Training magazine formed the basis of Jack Phillips' (1983) discussion of criteria to consider in evaluating outside resources. Essentially, the criteria identified in the study as influencing how and why organizations use outside sources are also used as the criteria by which to evaluate the programs.

Tables 1-3 summarize the results of the previously mentioned research concerning vendor-supplied program selection. In effect, cost, quality, ability to deliver, and capability considerations are the main factors influencing an organization's decision to purchase outside programs. Cost and ability to customize programs are the

key aspects in selecting an outside vendor. Cost, the need to solve difficult problems, and obtaining new perspectives and knowledge not available internally are important advantages in using an outside source vendor. In addition, the Human Resource Development (HRD) department was assessed to be in the best position to evaluate the

Table 1

Criteria for Buying Outside Rather Than Developing Inside

Why Buy Outside Rather than Develop Inside?*	
Range of resources available	49%
Quality of end product	43%
Speed of delivery	34%
Cost	34%
Capability of personnel	33%
Unique technology	27%
Other	13%

*Since respondents could select more than one factor, the total exceeds 100%. (Taken from a survey conducted by Training magazine and the Instructional Systems Association.)

Table 2

Criteria for Deciding Among Outside Vendors

When Selecting an Outside Training Vendor, What Are the Most Important Factors in Your Company Decision?*

Ability to customize programs	64%
Cost	60%
Favorable experience with vendor	56%
Reputation	55%
References/recommendations	49%
Capability of instructor	40%
Research/development capability	33%
Depth of product line	20%
Media compatibility	11%
Influence of the salesperson	4%

*Since respondents could select more than one factor, the total exceeds 100%.
(Taken from a survey conducted by Training magazine and the Instructional Systems Association.)

Table 3

Attitudes Toward Outside Vendors

Outside Vendors	Agree*
Bring fresh perspectives	83%
Help solve difficult problems	61%
Spread costs over clients	54%
Make practical applications	51%
Tailor programs	50%
Tend to be leaders in software and conceptual material	47%
Promise more than they deliver	41%
Rip you off	11%

*Since respondents could select more than one factor, the total exceeds 100%.
(Taken from a survey conducted by Training magazine and the Instructional Systems Association.)

effectiveness of a program and to make the buy/build decision (Lashbrook, 1981a; Phillips, 1983).

In considering the selection of the best program from several alternatives, Phillips suggested using a three-point comparison ranking, weighting each criterion, and then solving to determine the best choice. If possible, pilot test the program before purchasing it. A written guarantee should be secured from the vendor. Even though the organizational factors involved in the implementation of a program are important, a vendor who has confidence in the product should be willing to guarantee the program's effectiveness (Phillips,1983).

Another source concerning the selecting and purchasing of vendor-supplied training programs was presented by Martinetz (1986). Based on his experience at AT&T, he proposed a checklist form for program evaluation. No attempt was made to substantiate or relate the checklists to previously published research, theory, or models. Essentially, the reader is presented with two worksheets based on both a subject matter review and an instructional technology review. Section One, performed by a subject matter expert, is divided into three parts: technical content, relevance, and program design. Section Two, performed by a design specialist, also consists of three parts: program design, media, and administrative information. Summary sheets for each section are combined to rate the proposed program one of four ways: (a) acceptable as is, (b)

acceptable with minor revisions, (c) acceptable with major revisions, or (d) unacceptable.

A very limited explanation accompanies the two checklists. Unfortunately, the author failed to consider many of the questions and issues associated with the development, use, and validity of the materials presented. For example, is it valid for a subject matter expert to rate the program design if he or she is not trained in the program development process? How is the information from the checklists fed back into the program selection process? Are there trade-offs in using a simplified yes or no rating scale versus using a more complex one? A strength of Martinetz's checklists lies in the practical way in which the checklists were supposedly developed and used. Unfortunately, no data are provided on the actual effectiveness of the model.

Several authors deal with the evaluation of programs within a specific industry or subject context. According to Honeycutt, Harris, and Castleberry (1987) the typical sales training program checklist includes such criteria as objectives, content, type, instructional methods and techniques, aids, trainees, trainers, administration, and evaluation. Objectives, content, methods and techniques, and evaluation were the four most important criteria they considered.

Powers' (l983) model for designing sales training evaluation includes a step for conducting instructional analysis. This step requires listing the skills contained in the program and determining how they could be measured when translated to the actual

environment. Because his model requires that the measurement variables be quantifiable, the measures serve as a basis for experimental comparison, and statistical analysis can be used to measure the overall effectiveness of the program. In addition, the same data can be translated into monetary terms so that a cost benefit analysis can be performed.

Focusing on the means by which organizations can improve the effectiveness of sending members to outside seminars, rather than how they can bring an outside program in-house, Kirkpatrick (1985b) proposed a five-step model. In his discussion of management and supervisory training and development programs, he stated that "the best way to judge the relative merits of a particular program is to evaluate them after they have been attended" (p. 40). Participants fill out a simple evaluation form, which is used to rate the program for other people who might be interested in attending it.

The strength of Kirkpatrick's discussion lies in his consideration of the organizational factors involved in using outside programs. Although there are limitations to his remarks about selecting a program, other steps of his model, such as selecting participants, preprogram discussion, postprogram discussion, and keeping records, are useful. Need and desire are important to the participant selection process. Involvement of the student's supervisor in a preprogram discussion concerning the program and the individual's participation in the program is important. According to Kirkpatrick, the follow-up postprogram discussion should include a written evaluation, a written and/or oral summary of content, and

assigned projects that are based on the preprogram discussion. Records should be kept of who has attended what program.

None of the models reviewed is complete. However, certain factors were important in more than one model. These factors include: (a) how well the subject matter or content of the program fits the identified training need, (b) the quality of the program's instructional design methodologies, (c) aspects of the purchasing organization, (d) aspects of the vendor's organization, and (e) ways to determine the effectiveness of the program, such as contacting previous buyers. Several of the models advocate certain processes by which the purchasing organization may better evaluate each of the factors that are important to the decision-making process. These factors serve as the basis for creating a model for the selection of vendor-supplied training programs in the next chapter.

Sources of Externally Provided Programs

How an individual or organization may find out about vendor-supplied training programs is also addressed in the literature. The process of choosing a program is compared to that of selecting a person to fill a job: the more choices there are, the more likely a good decision will be made (Kirkpatrick, 1985b). The following is a list of potential sources for finding out about externally provided programs:

- Direct mail brochures are targeted with surprising accuracy to professionals and prospective decision makers who might consider use of a vendor-supplied product. (Rogers & Volpe, 1984; Sredl & Rothwell, 1987)

- College and university programs as well as vocational education institutions may provide other sources.
- Professional societies such as the American Society for Training and Development (ASTD) provide a number of sources: informal networking at meetings, the ASTD member information exchange that is cataloged according to professional expertise and interests, a computer network of subject information, and a publication in which many vendors advertise.
- Periodicals specific to an industry or topic may provide reviews of programs and advertising of specific programs. Vendors often use training industry publications, such as the Training and Development Journal (published by ASTD) or Training magazine (published by Lakewood Publications, Minneapolis, MN), as a place to advertise their products and services.
- Specialized publications often list available programs by topic. One example is the yearly Trainer's Resource (published by HRD Press, Amherst, MA). This two-volume publication lists programs by training topics and reviews available programs under each topic. Although the lists are not complete, this format provides more information about the program than do most other sources. Programs are reviewed according to intended audience, program description, delivery system, instructional strategies, recent users, cost, rental, preview availability and

vendor. Other examples are the yearly ASTD Buyer's Guide and Consultant Directory and Marketplace Directory (published by Training magazine).

- Trade shows and conferences often include vendor exhibits and provide an opportunity for training buyers to meet professionals and consultants who have similar interests and experiences.
- Reporting services such as that offered by ASTD's Trainet or the Seminar Clearinghouse International of St. Paul, Minnesota, will provide a listing of available programs to meet a particular topic.
- Networking and asking people in other departments of one's own organization about sources of information often yields information about potential programs, vendors, and consultants.

The above list of potential sources is a reasonably complete list of sources to find potential programs and vendors (Sredl & Rothwell, 1987; Cantwell et al., 1976; Rogers & Volpe, 1984). What these sources do not provide is a basis for evaluating the quality or effectiveness of the program in question. Although some sources are more complete than others, no source claims to provide a complete list of all, or even most, of the programs available for a given topic. Many of the sources would have the reader believe they offer a complete list, even if that is not true. Even though the above list is a synthesis of the sources mentioned in the literature, it too

is not complete. Further, the quality of a program cannot necessarily be inferred from the reference source.

Instructional Development Systems

Although a review of the literature on instructional development systems and program design components may provide a framework by which to assess programs according to acceptable instructional design methodologies, each of the components and processes used in program design and development may be considered from the perspective of program selection and evaluation. The process by which a model for program selection is developed would necessarily have some basis in the program development literature.

A representative instructional design system that could serve as a basis for developing a program selection model and instrument is the Training Technology System (TTS) proposed by Swanson (1987a). The five phases of the TTS are as follows:

1. Analyze. The analyze phase focuses on (a) separating training problems from nontraining problems and (b) defining precisely what people need to know and what they must be able to do to perform at work.
2. Design. The design phase includes both program design and lesson design. Program design is focused on matching the training program to organizational needs and constraints. Eight variables are used to focus on the lesson design process: (a) trainee readiness, (b) objectives, (c) content structure, (d) instructional sequence, (e) rate of delivery, (f) repetition and practice, (g) reinforcement and rewards, and (h) knowledge of results.
3. Develop. In this phase lesson designs result in lesson plans for instructor-based training or story boards for media-based materials. Peer review and pilot testing of

training materials usually result in revision of the materials, lesson design, and/or program design.

4. Implement. The implementation phase contains the program management plan and delivery of training.
5. Control. The control phase includes (a) evaluating and reporting the effectiveness of training, (b) revising training, and (c) maintaining trainee behavior once trainees are back on the job. Evaluation, the major step in the control phase, consists of an effectiveness evaluation plan, tools for measuring training effectiveness, and the evaluation report. (Swanson, 1987a)

Worksheets for performing many of the tasks in the TTS are provided.

This model is similar to previously developed models, for example, Tyler's (1949) that proposes (a) needs assessment, (b) setting of goals and objectives, (c) design of instruction, (d) management of the instruction, and (e) program evaluation.

Meister (1986) suggested a word of caution concerning this discussion of models for the instructional design process. Differences exist between what the models present and what happens in actual practice. The theory-practice discrepancy in such models has been stated by Brookfield:

> Nowhere is this theory-practice disjunction more evident than in the realm of program development for adult learners. As a professor who has taught many program development courses to educators and trainers of adults, I can attest to the frequency with which participants in these courses (who are mostly practitioners with several years of experience) state that they "break the rules of good practice" or "disregard theory for the real world of practice (1986, p. 202).

Regardless of likely differences between theory and practice, the TTS is a suitable framework from which to develop criteria for

evaluating and selecting vendor-supplied programs. Criteria that are important in each phase of training development may be reviewed from the perspective of the decision maker who is responsible for selecting a program.

Training Evaluation

Although the focus has not been on the selection of pre-existing training programs, much has been written about training evaluation. Initially, the focus of training evaluation was on outcomes, more specifically, on quantifying the effectiveness of a program after its implementation. This has led to models and procedures concerned primarily with the effectiveness and implications of training outcomes. A more recent focus of the evaluation literature addresses issues that occur before the implementation of the program. Ideas from the research and theory of training evaluation literature provide content that is important to the questions addressed in creating a selection model and instrument.

Before addressing the overall training evaluation literature, it is necessary to discuss the role that training evaluation can have in organizations. The purpose for which the evaluation is conducted is the primary factor in determining what models and methods the evaluator will use. The evaluation techniques, methods, and procedures will determine the evaluation outcomes. The focus of this investigation is guided by a primary emphasis on the selection process, and it is indirectly concerned with proving the cost-benefit ratio or effectiveness of the program to other members of the

organization. This investigation provides evaluation criteria for the decision maker to use during the part of the selection process that occurs before the implementation of a program, rather than focusing on after-the-fact evaluation.

What Are the Purposes of Training Evaluation?

Why do organizations and individuals evaluate training? Based on a survey of 33 training organizations, Brandenburg (1982) determined that the seven top-rated functions of training evaluation were (a) to improve the training program, (b) to provide feedback to program planners and management, (c) to gain knowledge of employee skill levels, (d) to provide feedback to program participants, (e) to build status or prestige for the training unit, (f) to analyze the cost of activities; and (g) to study employee effectiveness. This suggests that the primary focus of training evaluation is to provide feedback for the program development process rather than to simply prove program effectiveness, to show cost-benefit data, or to determine a go/no-go decision.

Evaluation techniques that provide feedback for program development and revision processes require a different focus than those associated with post-training evaluation. Rather than viewing evaluation as a relatively static task that occurs at isolated, pre-determined moments during the training program, evaluation can be seen as a dynamic, continuous process by which training programs and curriculum are updated and made more effective and efficient. Goldstein (1986) stated this as follows:

> For me evaluation is the systematic collection of descriptive and judgmental information necessary to make effective training decisions related to the selection, adoption, value, and modification of various instructional activities. The objectives of instructional programs reflect numerous goals ranging from trainee progress to organizational goals. From this perspective, evaluation is an information-gathering technique that cannot possibly result in decisions that categorize programs as good or bad. Rather, evaluation should capture the dynamic flavor of the training program. The necessary information will then be available to revise training programs to achieve multiple instructional objectives.
>
> It is possible to consider training evaluation as a succession of steps which provide information of better and better quality....The point is that establishing the validity of training programs involves building a network that gives more and more information with better and better controls so that the evaluator has more faith in the evaluation.
>
> Training programs should be considered dynamic entities that slowly accomplish their purpose in meeting predesigned objectives. Without systematic evaluation, there is no feedback to provide the information necessary to improve programs or qualify information to make decisions. (pp. viii, 143, 175-176)

Who Performs the Training Evaluation?

What people in the purchasing organization carry out the evaluation of potential training programs? This is important in order to know to whom a training program selection model and instrument should be directed. If the CEO of a company were to use the model, it might require a different design, or at least a different level of explanation, than if a person who is already trained in program design and development were to use it.

In a survey of management training evaluation procedures in 50 randomly selected Fortune-500 corporations, Clegg (1987) found

that the training staff was responsible for evaluation efforts about 80 percent of the time. An additional 8 percent of the companies used an ad hoc committee, which probably included representation from the training department. Outside consultants and specialists were used only 3 percent of the time. This indicates that there is almost no reluctance to having the group that is responsible for providing the training also provide the evaluation of the training.

Brandenburg's 1982 study addressed the skills required for an effective training evaluator. Interpersonal skills ranked highest, followed by curriculum development, program development, and instructional-material development, respectively. This is consistent with the overall conclusions of the Clegg (1982) study that the function of training evaluation is to provide feedback to the training process. In terms of the person providing the evaluation,

> smaller organizations are more likely to have an instructional designer or developer function as an evaluator, while larger organizations would more likely have a person with a broad range of statistical, measurement and development skills. This latter person, however, would not necessarily have sole responsibility devoted to evaluation tasks. (p.18)

Sredl and Rothwell (1987) listed HRD practitioners, learners, and third-party evaluators as potential evaluators. Third-party evaluators could include managers, subordinates, or peers of the trainees, as well as consultants inside or outside the organization or HRD department. In order to assure compatibility among programs supplied from an outside source, one company reported using an internal quality-control panel of people who work in the targeted training area. "The group screens new material and helps determine

whether it's compatible with what has been taught before" (Cothran, 1987, p. 84). In addition to potential trainees, subject matter experts, design experts, and HRD people can serve on the selection committee. Various structures might be used to direct the group's activities. Rating instruments, checklists, or group interaction methods, such as the nominal group technique may be employed to stimulate discussion and to achieve a group consensus (Brinkerhoff, 1988).

In summary, the evaluator is usually a member of the HRD department. The evaluation may be performed by an individual or an ad hoc team. The choice of who will perform the evaluation depends on the organization and purpose of the evaluation. The involvement of representatives from the target audience appears important to the identification of certain problems involving consistency among training programs from different sources.

Models of Training Evaluation

The best known framework for training evaluation was proposed in 1967 by Donald L. Kirkpatrick (1975). His four-step hierarchy addresses the major elements in the evaluation process:

- Reaction. This lowest level is measured by participant surveys and addresses the question, "To what degree were the participants satisfied or unsatisfied with the program?"
- Learning. Test scores are used to measure the degree to which participants understood and learned the principles, facts, and techniques in the training program.

- Behavior. This third level determines the degree to which job behaviors actually changed as a result of the newly acquired skills, knowledge, or attitudes provided by the program.
- Results. This fourth level addresses the tangible consequences of the training at the organizational level. This may be done by methods such as an experimental assessment in which trained workers are compared with untrained workers or a cost-benefit analysis (Birnbrauer, 1987; Kirkpatrick, 1976, 1983).

By focusing on the organizational impact of training, Kirkpatrick's model provides a basis for moving beyond simple reaction-based evaluations. Indeed, Hamblin (1974) added a fifth level entitled ultimate value. This level goes beyond the experimental research that measures short-term results to include long-range issues such as how the training affects personal career goals and organization strategy (Hamblin, 1974; Sredl & Rothwell, 1987).

Critics of the Kirkpatrick model focus on the outcome orientation it represents. Each of the four levels focuses on evaluating training that is already in place, rather than training that is being developed or selected. By addressing issues associated with the development of a training program, Kirkpatrick perpetuates the trial-and-error approach to program selection and implementation. If one purpose of evaluation is to provide the organization with input that can be used to revise, or even abort, a program before it incurs the higher costs of implementation or

piloting, the Kirkpatrick model provides no assistance (Brinkerhoff, 1988).

Brinkerhoff provided a more comprehensive model for evaluating HRD that begins with determining the training needs of the organization and includes assessing the long-term organizational impact and worth of the program. Based on the idea that the primary importance of HRD is training employees to ultimately benefit the organization, he developed the following six-stage model:

1. Goal Setting (What is the need?) A need, problem, or opportunity worth addressing exists that could be influenced favorably by someone learning something.
2. Program Design (What will work?) An HRD program capable of teaching the needed something is designed or located.
3. Program Implementation (Is it working?) The organization successfully implements the designed program.
4. Immediate Outcomes (Did they learn it?) The participants exit the program after successfully acquiring the intended skills, knowledge, or attitudes.
5. Intermediate or Usage Outcomes (Are they keeping and/or using it?) The participants retain and use their new learning.
6. Impact and Worth (Did it make a worthwhile difference?) The organization benefits when participants retain and use their learning. (Brinkerhoff, 1988, p. 67)

Brinkerhoff's model incorporates Kirkpatrick's outcome evaluation levels and Hamblin's organizational focus, as well as needs assessment issues. In addition, he addresses the development and instructional factors that are the focus of this paper. His model will be considered in greater detail.

An advantage of Brinkerhoff's model is that it identifies two critical decision points that are important to creating effective training solutions: (a) If the needs assessment is wrong, the entire program will be worthless, and (b) if a program with a critical design flaw is implemented or pilot-tested, valuable time and money will be wasted. By forcing HRD professionals to clarify the logic of a program from the conception and definition of a training need to the organizational payoff, the "six-stage model precludes defining a program as successful because it is popular, or because it is easy to teach, or because it uses state-of-the-art technology" (Brinkerhoff, 1988, p. 68).

By expanding the evaluation focus to include the developmental stages of HRD programs, the process by which to improve programs and results can be identified. Because it focuses primarily on the result, outcome information does not necessarily identify the source of the problem. This model:

> emphasizes a formative evaluation role and encourages the recycling of evaluation information from and to each of the six stages. In this way, all programs are made to work as best they can, and good programs are made even better. (Brinkerhoff, 1988, p. 68)

It emphasizes getting at the important information required for making good training decisions. Because no program is perfect, but rather represents degrees of acceptability across a number of factors, information is required about how and to what degree a program fits the decision maker's goals and the organization's needs.

Stage II of Brinkerhoff's model addresses the program design aspects and implementation issues of training evaluation that are important to this study. This stage determines the point at which a design is strong enough to put it into operation. Similarly, this study addresses the issue of how to determine whether or not a pre-existing program is good enough to be implemented in the buyer's organization. This stage also may represent issues associated with assessing how a program could be customized to fit the unique characteristics in the buyer's organization.

Key evaluation questions for Stage II include, what kind of HRD design might work best in a given situation? Is design A better than the alternatives? What is wrong with the design? Is the design of high enough quality to proceed with implementation? Procedures by which these questions can be answered include expert reviews, literature reviews, panels, checklists, site visits, pilot tests, participant reviews, observations, trainer and trainee feedback, and records analysis.

The questions at Stage II have several common characteristics: they are future-oriented because training has not yet been implemented, and the answers are largely a result of expert judgment, not fact. Research on teaching and learning, program development, and training experience and expertise are important for providing an informed judgment at this stage. Benefits of using a team approach in the Stage II evaluation include:

1. Commitment and "buy-in." A systematic Stage II evaluation that solicits opinion and advice from those persons in the organization who will be most affected by

the HRD program engenders the "buy-in" phenomenon and increases the commitment to change that is required if change is to occur.

2. Customer accountability and concern. A Stage II evaluation can be conducted to identify the expectations for and reactions to proposed program designs of such HRD "customers" as trainees and their immediate superiors. [This] demonstrates and operationalizes a concern for customer accountability and assures that customer concerns are considered before HRD takes place.
3. Using and modeling participation. Stage II evaluation affords an opportunity to model participatory methods. Carefully and systematically gathering trainee reactions to program designs and plans is one of the best and most direct methods of meeting this compatibility issue. Such efforts almost always yield ideas on how to make critical revisions to a design. Such involvement breeds political support and enhances commitment to and "ownership" of the program among trainees. These efforts democratize HRD and tend to diffuse its control to increasingly lower levels in the organization.
4. Facilitating transfer of training. Stage II evaluation approaches can be used to systematically involve these key groups in the training design process, soliciting and using their input to revise designs....First, these groups will inevitably have good ideas on how to revise the training to make it more usable on the job. Second, the process of soliciting their input is a sort of covert training that creates knowledge and awareness crucial to transfer of training effects.
5. Shaping expectations for success. Stage II evaluation that involves key audiences for the program in a critical review of designs will be better able to inform those audiences about how the HRD program is supposed to work, the problems it will face, and what it hopes to accomplish. Such Stage II procedures, because they stimulate dialogue about HRD, will help articulate and shape expectations for HRD's performance.
6. "Marketing" training in the organization. Human resource development leaders who make sincere and systematic Stage II evaluation efforts that involve, over time, key

> audiences from all levels in the organization are marketing the HRD function in a legitimate and productive manner. These efforts make HRD visible, keep it responsive to organizational needs and interests, and educate consumers as to its functions, problems, and benefits. (Brinkerhoff, 1987, pp. 73-77)

These benefits of participative techniques in program development and delivery and mastery measurement are similar to those outlined by Garen and Daniel (1983). Yet the limitations due to the theoretical nature of this stage require movement into Stage III to determine the actual, practical outcomes of what has been developed.

To document the program design, Brinkerhoff proposed using three worksheets in Stage II evaluation. The participant/outcomes analysis worksheet delineates who will receive the training, what are the immediate learning outcomes, what are the job-usage objectives, and what organizational benefits will occur if the training is successful. The components network worksheet shows the major process components of the program and how they work together to achieve the program's purpose. The input-process-output (IPO) worksheet gives the detailed operation of a component or subcomponent. On this worksheet, the inputs or resources that a particular component needs, the process by which the inputs will be converted into outcomes, and a listing of the outcomes that will be achieved are documented.

Criteria critical to Stage II evaluation include the following:

1. Clarity and Definition. Stage II requires clear definition of (1) HRD needs, goals, and objectives at immediate learning, usage, and organizational benefit levels, (2)

HRD processes and methods, and (3) the resources and inputs planned to support the program.

2. Theoretical Adequacy of the HRD Design. Training designs must be theoretically sound. They should incorporate sound learning theory and reflect the current knowledge and research base about how people learn best. These criteria for theoretical soundness occur over a wide range of dimensions, including such aspects as the structure of a learning activity, the format (and even the color) of materials, the extent of interactions and feedback incorporated, and the adequacy of facilities. The fields of instructional psychology and design are especially pertinent to this criterion.

3. Compatibility. A design must "fit" its environment and the culture of the organization of which it is a part. Considerations of compatibility would include such questions as:
   (a) Is the program consistent with other training programs and organizational priorities?
   (b) Is the program consistent with corporate culture, policy, and values?
   (c) Are program content and procedures compatible with trainee educational and spcial levels, values, and expectations?
   (d) Is the program consistent with the schedules, work demands, and personal practices of trainees?

4. Practicality and Cost Effectiveness. An HRD design must be economical and feasible. Evaluation of the cost criterion should be directed at each component in the program design.

5. Responsiveness to Needs. As a program design is nearing its final shape and specifications, it is wise counsel to "revisit" the initial goals and ask whether this HRD program is likely, in fact, to meet the goals initially set.

6. Superior to Alternatives. Training resources are limited, meaning that the problem is rarely that of getting the best HRD that money can buy; rather, it is usually that of getting the best HRD that the *least* money can buy. To put it briefly, alternatives must be considered and systematically compared during Stage II. HRD professionals should be prepared to argue not only that

one particular design is good but that it is *better* than contending alternatives.

7. Adult-Learning Practices. Program designs should reflect state-of-the-art practice when possible and should certainly avoid obsolete or outmoded methods.
8. Legality and Ethics. Criteria regarding ethics and legality are absolute and must not be compromised. (Brinkerhoff, 1987, pp. 85-89)

In summary, although Brinkerhoff does not consider the selection of vendor-supplied training programs directly, his Stage II Program Design considerations are relevant to this discussion. The benefits of performing Stage II design are similar to the potential benefits of a vendor-selection model. Worksheets are a powerful method for synthesizing data, and they provide the basis for an effective selection instrument. Criteria that are important at this stage may be similar to criteria that are important to consider in selecting a vendor-supplied training program.

Formative/Summative Evaluation

Front-end, formative, and summative evaluation processes represent distinctive elements in the evaluation literature. The distinctions between the three are based primarily on the time the evaluation is to take place and for whom the evaluation is intended. Evaluation of the needs assessment process occurs before the design is started, and it represents front-end evaluation. The first outcome of the needs assessment is the basis for determining that the perceived need can be met effectively with a training solution (Harless, 1975). The second outcome of the needs assessment, provided training is determined to be the most effective strategy to meet the need, is a detailed understanding of the training objectives

that must be achieved in order for the program to be effective (Sredl & Rothwell, 1987).

Formative evaluation provides feedback to the developer in the initial stages of program development. As conceived by Scriven (1967), formative evaluation is used to determine if the program will adequately meet the training needs for which it was designed. The focus is on testing a program's effectiveness before it is implemented. Formative evaluation is not limited to design evaluation, such as expert reviews for conformity to instructional design theory and accuracy of subject matter. Such empirical research methods as pilot-testing or performing behavioral rehearsals as a pretest of the materials units of the program may be used (Dick & Casey, 1978, 1985). Time and expense are key factors in determining the methods ultimately chosen. An expert review may be accomplished in days by one person, whereas a pilot test may require several weeks of planning and the involvement of a team (Foshay, 1984).

Summative evaluation focuses on the effectiveness of the program after its implementation (Anderson, Ball, Murphy, & Associates, 1975). Rather than focusing on data for the developers of the program, summative evaluation addresses issues that are more important to policy makers (Foshay, 1984); for example: How well did the participants learn the program objectives? Was the learning applied on the job?

Satisfactory reviews of the program during the formative evaluation process does not ensure that it will meet summative

evaluation standards. Thus, both formative and summative evaluation methods are required. However, formative evaluation should be performed before summative evaluation is begun (Goldstein, 1986).

Foshay cast the distinction between formative and summative evaluation in terms of quality control and quality assurance based on the differing needs of the public and private environment.

> The business context changes the nature of the evaluation design so that many aspects of the conventional formative/summative distinction no longer apply. Structuring the training enterprise as a business places special requirements on the evaluation which differ from those of the public sector. Significant factors are the structure provided by the vendor-client contract, the importance of cost-effectiveness considerations, and the usefulness of evaluation as part of the design and project management systems. When taken together, these factors lead to an evaluation system which is quite different from those commonly described for public-sector projects, even though many of the underlying principles are the same. (1984, pp. 15, 17)

Foshay equated summative evaluation with quality assurance and formative evaluation with quality control. To the training vendor, redefining summative evaluation as quality assurance moves the focus from the final product provided to providing a means by which the vendor can assure the client that defined quality standards have been met throughout the development process. The quality of the process the vendor used to develop the training program is as important as the product. Unlike summative evaluation, quality assurance is determined by the vendor before the program is implemented in the client organization. Essentially, quality control

is the same as formative evaluation. Business concerns such as time and money increase the likelihood of using cost-effective formative evaluation approaches, such as expert reviews, instead of empirical trial-and-error methods, such as pilot trials.

The critical elements of this discussion that can be used here include the breakdown of the formative/summative distinctions in the business setting and the consequent introduction of additional factors into the evaluation process. These factors include (a) an increased emphasis on cost effectiveness, (b) the importance of creating evaluation data that are timely and useful to the decision makers, and (c) an evaluation process that is compatible with the company's management structure. These are factors that result from the business nature of the client/vendor business relationship (Foshay, 1984).

Instructional Design and Delivery

In the literature on instructional design and delivery, a number of evaluation models have been proposed based on the need to make instructional design decisions rather than management decisions. One author stated that there is no lack of such methodologies (Morrison, 1986), but another stated that the most serious problem in training evaluation has been "the failure to even consider the instructional methods" and various components of the training program (Goldstein, 1986, p. 113). In this section key aspects of the literature concerning the development stages of training programs are reviewed. The framework by which the instructional design literature will be referenced is based, in part, on the key areas

suggested by the previously reviewed literature on the selection of vendor-supplied training programs and on the phases of the Training Technology System. Instructional design systems, such as the TTS and other evaluation models, use various design evaluation procedures and assume the existence of design-evaluation literature. Comparing program content to the specified training needs is considered first. This dimension corresponds to the question of how well the program addresses the identified training needs of the purchasing organization.

Issues associated with program design and development will be considered in two areas: instructional system factors and implementation factors. Instructional system factors include objectives, trainee readiness and trainee characteristics, structure of content, instructional sequence, application of adult learning principles, and anticipation of transfer-of-learning problems. Implementation factors include rate of delivery, repetition and practice, knowledge of results, reinforcement and rewards, delivery methods, media planning, and written materials (based on Smith, 1983a). These dimensions correspond to the design and development phases of the TTS. Literature pertaining to program, lesson design, and training materials development are referenced in the Training Technology System Bibliography (Swanson, 1987) and in the ASTD Reference Guide to Professional Training Roles and Competencies, Vol. II by Sredl and Rothwell (1987).

Content

The content of the program is the key focus of the initial design effort. What knowledge, skills, or attitudes will be addressed in the training? The critical strength of the TTS system considered above is its in-depth analysis phase. The precision with which the analysis of work behavior is performed, the determination of organizational as well as individual needs, and the focus on organizational causes and motivational elements of performance provide the solid foundation that is required for successful implementation (Swanson, 1986). The outcomes of the analysis phase provide the criteria by which to assess the effectiveness of the training in the latter phases (see Swanson & Gradous, 1986).

When the decision maker considers program content, some issues become apparent: To what degree does the program contain the content specified in the analysis phase? Does the program contain material not required by the analysis? The relationship between the stated requirements of the program and the program itself forms a two-axis matrix with four possible values: (a) content that is required according to the analysis and that is addressed in the training program represents a measure of content relevance, (b) content that is not required according to the analysis and that is not addressed in the training program is also considered to represent a measure of content relevance, (c) objectives from the needs assessment that are not covered by the training program represent content deficiencies, and (d) information covered in the training program that is not required according to the analysis performed represents content contamination. The following diagram

shows the possible relationships among program content and assessed objectives (see Goldstein, 1986).

	Objectives Considered In Program Content	Objectives NOT Considered In Program Content
Knowledge, Skills, Attitudes Required By Needs Assessment	**CONTENT RELEVANCE**	**CONTENT DEFICIENCY**
Knowledge, Skills, Attitudes NOT Required By Needs Assessment	**CONTENT CONTAMINATION**	**CONTENT RELEVANCE**

Figure 1--Relationships Between Content and Assessed Needs

To the degree that the content of the program represents the knowledge, skills, and attitudes required, the program may be considered content-relevant. This measure provides a basis for utilizing training in the most time-effective manner. Not provided by an evaluation of content relevance is information about how successful the program was in training the participants and how well the participants were able to transfer the training to their jobs (Goldstein, 1986; Guion, 1977).

Because content relevance assumes that the information presented in the program is accurate and current, procedures for determining content validity may require a review by subject matter

experts. Several of the evaluation models referenced above discuss such reviews (Cantwell, et al., 1976; Foshay, 1984; Martinetz, 1986; Rogers & Volpe, 1984).

Instructional System Factors

Two sections of the design evaluation literature that were reviewed include the methods and the techniques available to the designer for presenting the program content. Issues such as trainee readiness, content structuring, instructional sequencing, rate of delivery, repetition and practice, testing, measurement of results, and reinforcing and rewarding the training outcomes are key design variables identified in the Training Technology System (Swanson, 1987a). Other design variables mentioned in the literature include delivery methods, implementing adult learning theory, and facilitating transfer-of-learning.

Critical to any discussion of design variables is the assumption that each of the variables mentioned contributes to the overall effectiveness of the program. However, research has not been able to verify what methods will lead to effective instruction (Tobias, 1987). Various suggestions have been made about why a connection between design and delivery variables and training outcomes has not yet been verified. According to the trait-treatment explanation, the lack of significant findings is the result of a failure to consider how the traits of individual learners affect the treatment. Differences in learning styles may alter the effectiveness of different instructional methods. These and other possible explanations have been reviewed by Smith (1983a, 1983b).

In response to these findings, Smith conducted a comprehensive review of the literature to determine what instructional variables are common to instructional delivery systems (Smith & Currey, 1983). These variables, used in the Training Technology System, are discussed in detail in the following sections.

Objectives

Objectives have been the focus of considerable inquiry and research. They may be defined by type (cognitive, affective, and psychomotor), by scope (individual, job, organization, or society), and by time (end of unit, end of program, life) (Sredl & Rothwell, 1987). In the Training Technology System, objectives are categorized on the basis of type or learning domain. The three learning domain categories of objectives include behavioral (psychomotor and observable skill), affective (attitudinal), or cognitive (knowledge) objectives. Given that objectives may overlap regarding the learning domain, the dominant domain is used to categorize objectives. Choosing the correct domain depends on determining the learning domain that differentiates between expert and less than expert performance for that objective (Swanson & Gradous, 1986).

Objectives also may be classified in terms of specificity or vagueness. At the program and subprogram level, objectives should be specific (Sredl & Rothwell, 1987). To be specific, an objective must include the following three elements:

1. The objective should specify a performance component (knowledge, skill, or attitude) identifying what a participant must do.
2. The conditions under which the result of the objective will be achieved should be given.
3. The criteria by which the outcome of the objective will be measured as successful should be given (Davies, 1981; Mager, 1962).

Four common pitfalls in writing objectives were identified by Davies (1981):

1. Objectives are stated in terms of what the instructor is going to do, not the student.
2. Objectives are based on the teaching strategy and not on the behavior in which the student is being trained.
3. Objectives use high-sounding impressive words that don't mean much. It is better to use straightforward, simple English in writing objectives.
4. Objectives fail to identify performance in clear enough terms. The action verb is ambiguous as opposed to being specific (i.e., to understand versus to name). The content is not well defined. (pp. 138-139)

Pitfalls 1, 2, and 4 could be objectively assessed by a reviewer, and thus they could be included in a systematic evaluation process. Assessing the writing style of an objective appears to represent a more subjective evaluation process in which there could be considerable ambiguity concerning borderline cases.

Trainee Readiness and Trainee Characteristics

Most programs have been developed for a target population. The better the fit between the targeted audience for which a program has been developed and the actual participants, the more likely it is that the training will be effective. This relationship includes the concepts of trainee readiness and trainee characteristics.

Trainee readiness pertains to "the stimulus content with which the learner is already familiar" (Smith, 1983a, p. 21). A pretest can be given to prospective trainees to determine the knowledge and expertise they bring to the training. Perhaps the content can be initiated at a higher abstraction level that is familiar to the learners (Ausubel, 1963; Smith, 1983a).

Closely related to trainee readiness is the concept of trainee characteristics. Whereas trainee readiness refers to knowledge and work experience shared by the targeted audience, trainee characteristics include other factors associated with training delivery. The Training Technology System asks the following questions concerning the characteristics of the targeted audience: What is the total number of trainees? How many trainees will be trained at one time? What is their education level? What type and amount of work experience do they have? (Swanson, 1987b)

In order for the decision maker to select a vendor-supplied program, information is required about both the target audience for which the program was designed and the audience that will receive the training. The trainee characteristics of the target audience for

which a program was designed can be determined in several ways. The need the program is intended to meet may define the audience, such as an orientation program for new employees. Prerequisite knowledge and skill may be stated in the descriptive literature presented to potential buyers or in the introductory sections of the trainee materials and leader guides (Sredl & Rothwell, 1987). Trainee characteristics may be included in the assessment work performed by the vendor preceding the program development process.

Structuring the Content

Content structure describes how the designer presents the material so that the student can integrate the information with what was previously known. "Would the presentation be improved by presenting the material around a logical or a conceptual model?" is the key question (Swanson, 1984; 1987b). One form of structuring content involves the principle of scaffolding, in which each of the content elements or subsystems of the training is subsumed into a unified concept or overall system (Ausubel, 1963; Shoemacker, 1969; Smith, 1983a). For example, methods of troubleshooting personal computers may be graphically structured according to a picture of the parts within the system. What is important is that the structure employed allows the student to remember (encode) and later access (decode) the information after the training is completed (Smith, 1983b).

Other examples of structuring content involve using either an analogy or an advance organizer. An analogy can provide the means

for the learner to apply the new knowledge by relating it to already-acquired schema. An advance organizer is:

> an instructional method which is positioned prior to the body of the instructional material and presents an overview of the instruction at a higher level of abstraction. The purpose of the organizer is to provide the learner with an organizational framework or schema on which the learner can build the details of the lesson. For example, in a course designed to provide content experts the skills and knowledge necessary to design and develop effective training programs, an introductory overview of the generic instructional design model is provided. An effective advance organizer must provide an organizational structure which accurately reflects or subsumes the details of the lesson for a learner who otherwise would not have the orienting structure. (Clark & Clark, 1984, p. 3)

Unfortunately, the limited research concerning the effectiveness of structuring has been equivocal. Research on advance organizers has yielded inconsistent findings. This circumstance may be due to the failure of the researchers to consider differences in learners and the goals of the learning task (Mayer, 1979). The importance of the advance organizer could be dependent on variables not yet controlled for by the researchers. These variables could concern how well the advance organizer captures the instruction that it is intended to synthesize and the level of knowledge the trainee has prior to beginning the training (Clark & Clark, 1984).

Instructional Sequencing

Instructional sequencing addresses questions about where to begin the instruction and how to teach the material at the presentation stage. How can the activities and instruction methods

be organized best to communicate the content to the student? Briggs (1967) emphasized the importance of sequencing--arranging the content into hierarchies--so that new knowledge or skills can be systematically integrated with previous knowledge and skills (also see Smith, 1983a).

Various methods of sequencing have been proposed:

1. Logic provides a commonly used sequencing principle. Ordering the program based on the chronology of the elements from past to present is an example of this. Following a learning hierarchy in which skills are structured from simple to complex is another type of logical sequencing.
2. Procedural steps in the order required to perform a task is another basis by which to sequence instruction, as in following a recipe.
3. Whole-to-part learning may be accomplished by first presenting a model and then considering each aspect of it.
4. Key questions around which to plan the instruction may provide a challenge for the learner and stimulate his or her curiosity. (Sredl & Rothwell, 1987)
5. Inductive learning may be used when experiential learning is important. Through this approach, the participants discover learning for themselves by following a five-stage cycle of (a) experiencing or performing an activity, (b) sharing reactions and observations, (c) processing and discussing the patterns and dynamics of the

> experience, (d) generalizing and inferring principles about the event, and (e) applying and planning more effective behavior based on the new knowledge. (Pfeiffer & Jones, 1973-1979)

In the end, there is no one right method by which to sequence instruction.

> What is important is that approach match intended purpose. If the idea is to build skills, procedural structures or learning hierarchies are probably most appropriate. If the idea is to help learners adapt to life problems, then a problem-oriented approach is probably best. (Sredl & Rothwell, 1987, p. 116)

Principles of Adult Learning

Many of the principles of adult education can be adapted to increase a program's overall effectiveness. A group of faculty members and experienced practitioners at Columbia University reviewed the literature and reflected on their experience in teaching adults. Their work resulted in eight principles for effective adult training that serve as a summary for much of the research concerning adult education (Brookfield, 1986; Knowles, 1980; Mezirow, 1981). Those principles are:

1. The presence of a climate of respect for adult learners (physical, social)
2. Reliance upon a collaborative mode of learning (including design, implementation, and evaluation)
3. The fostering of progressive learner self-directedness and empowerment
4. Drawing upon learner experiences as a point of departure for learning experiences
5. Learning realized through a participative environment

6. An emphasis on critically reflective thinking and awareness of social and cultural norms (contextual factors)
7. A concern with learning for action (including decision-making, behavioral change, learning to learn, collective action)
8. The fostering of problem-posing and problem-solving based on real problems in the lives of the learners (McAllaster, 1987, p. 25)

Other sources on the subject of adult learning principles include Sredl and Rothwell (1987), Laird (1985), and Zemke and Zemke (1981).

Transfer of Learning

Perhaps the most important measure in the evaluation of training programs concerns the transfer of learning to the participant's job. If the knowledge, skills, or attitudes developed in the program cannot be utilized to improve job performance, the training has no value. The training may even have a negative effect if the on-the-job application of the new learning frustrates, demoralizes, or demotivates the participants (Sredl & Rothwell, 1987). During the planning stage of program development, designers question internal and external conditions of the organization that could prevent the trainees from applying what they have learned to their jobs. Is the program content consistent with the culture of the organization, the work group norms, the role requirements, and the individual beliefs and values? At the program design and delivery stages, the attention of learners should be focused on identifying forces that may assist or prevent them from applying what they have learned (Sredl & Rothwell, 1987).

Implementation Factors

The implementation factors of training considered here include rate of delivery, repetition and practice, knowledge of results, reinforcement and rewards, delivery methods, media planning, and written materials.

Rate of Delivery

It is important to consider what the rate of learning should be and how big each instructional "piece" should be. Obviously, if the instruction proceeds too fast, participants will become frustrated, which will lessen the overall effectiveness of the training. If the instruction proceeds too slowly, participants may fail to pay attention, which, likewise, will lessen the program's overall effectiveness (Smith, 1983a; Swanson, 1987b).

Repetition and Practice

Repetition and practice are also critical factors for training effectiveness and for increasing the transfer of the training to the job. Generally, the degree to which information is used and practiced in training determines how well the information will be used and retained on the job. Focus should be given to what the practice will consist of, how much practice is required, and how the practice will be remediated (Smith, 1983a; Swanson, 1987b).

Testing and Measuring Performance

Testing and measuring the participants on how well they have accomplished training objectives is conducted for at least four reasons: (a) to assess entry-level problems or difficulties of students, (b) to motivate the participants, (c) to identify problems with the delivery or design of the training, and (d) to provide the

participant and instructor with feedback on how well performance compares to the original instructional objectives. Certain types of tests or measurements work better with certain types of objectives. In the cognitive domain, test items may include true-false, multiple choice, essay, fill-in-the-blank, matching, and oral response. Affective objectives can be assessed with essay, oral response, and projection types of items. Often, it is best if psychomotor objectives are demonstrated (Denova, 1979; Sredl & Rothwell, 1987).

The critical questions of, "What will be used to assess trainee performance?" and "How will this information reach the trainees?" are critical to assessing a program according to its use of measurements and tests to provide feedback (Smith, 1983a; Swanson, 1987b). In reviewing training programs, the decision maker should take care to ensure that test questions or measurement methods are consistent with the initial objectives and assessed needs (Rogers & Volpe, 1984). The high satisfaction ratings of participants should not be mistaken as a measure of participants' actual achievements (Cantwell et al., 1976).

Motivation, Reinforcement, and Rewards

Reinforcement and rewards for training outcomes are powerful techniques for motivating students both during and after the training. When the rewards are changed from explicit to implicit, the likelihood that new behaviors will be implemented and persist after the training increases. Important questions to ask are: What reinforcement or rewards are offered in the program? How will they be applied (Smith, 1983a; Swanson, 1987b)?

Motivation is probably as important a force as ability when determining on-the-job performance. A willing learner who has average ability may be much easier to train than an unwilling learner who has superior ability. At least six major factors have been identified and supported by research as having a significant impact on learner motivation (Wlodkowski, 1985a, 1985b). If each factor is given major consideration at the appropriate point in the program, it can be used to maximum effectiveness. This research is summarized as follows:

Beginning:	1.	Attitude. The learner's attitudes toward the general learning environment, instructor, subject matter, and self.
	2.	Need. The basic needs within the learner at the time of learning.
Middle:	3.	Stimulation. The stimulation processes affecting the learner via the learning experience.
	4.	Affect. The affective or emotional experience of the learner while learning.
Ending:	5.	Competence. The competence value for the learner that is a result of the learning behavior.
	6.	Reinforcement. The reinforcement value attached to the learning experience for the learner. (Wlodkowski, 1985b, p. 4)

Each motivation factor represents an aspect of the program that the buyer may consider when evaluating a program. For example, how does the program continuously stimulate the learners?

Instructor-Led Group Presentation Methods

Delivery methods will be discussed in two sections: instructor-led group presentation formats and media-based delivery

methods. Methods of delivery are used in instruction for several purposes:

1. Methods represent the means by which the content of the program is delivered.
2. The method may evoke insight and may motivate and maintain the interest of the participants.
3. Certain methods can help students to relate the training to their jobs.
4. Methods may provide a safe environment in which to practice a newly acquired skill or behavior. (Sredl & Rothwell, 1987)

A comprehensive listing of instructor-led group presentation formats is presented in this discussion based on Laird (1985), Davies (1981), Wenig (1978), Anderson (1983), Goad (1984), and Sredl and Rothwell (1987).

1. Lecture and Lecturettes
2. Unstructured Reading Assignments
3. Structured Reading Assignments
4. Demonstrations
5. Field Trips or Excursions
6. Note Taking
7. Open-Forum Discussions
8. Question and Answer Sessions
9. Performance Tryouts
10. Brainstorming
11. Action Mazes
12. Case Studies
13. Jigsaws
14. In-Baskets
15. Incident Process
16. Team Tasks/Buzz Groups
17. Agenda-Setting Buzz Groups

18. Fishbowls
19. Role Plays
20. Reverse Role Plays
21. Doubling Role Plays
22. Programmed Instruction
23. Structured Discussions
24. Panel Discussions
25. Rotation Role Plays
26. Simulations
27. Games
28. Clinics
29. Critical Incidents
30. T-Groups
31. Hot Role Plays
32. Skits
33. Cognitive Networks
34. Behavior Modeling
35. Conferences
36. Workshops
37. Symposia
38. Organization Development Gatherings
39. Huddle Groups
40. Delphi Procedures
41. Nominal Group Techniques

Media Planning

Training media represent vehicles for delivering instruction to the learners. The questions about media consider whether certain media are more effective for presenting certain types of information with certain types of instruction, what effect the media has on instructional outcomes, and what constitutes a good application of media in a program. This section includes a description of the research on the use of media in training programs. The goals are to provide an understanding of various media available for training and to highlight information that is pertinent to proper use of the media (Sredl & Rothwell, 1987).

The research literature indicates that "media do not under any circumstances influence performance. There is clear evidence that in other than the most obvious cases, any medium will handle any subject matter content effectively" (Clark & Clark, 1984, pp. 1-2; Jamison, Suppes, & Welles, 1974). Some of the problems in researching the connection between media and performance also represent potential biases that must be considered when selecting programs. When newer media are compared to more traditional media, research results often are biased by the use of more effective instructional strategies in programs that include newer media. When instructional strategies are held constant, it has been proven that there is no difference between electronic and live-trainer presentations. Another research error is the failure to control for the novelty factor associated with newer media. In time periods of less than four hours, a slight increase in learning can be shown with novel media; however, this difference disappears after approximately four hours. "The use of a technologically complex delivery system does not, of itself, insure the quality of the instruction" (Clark & Clark, 1984, p. 2). In making purchasing decisions, the decision maker should take care to ensure that any advantages assumed about the more novel media are justified regarding additional expense and special requirements.

Several of the potential benefits of using media properly are as follows:

1. Costs associated with mediated programs may be considerably less that those required for classroom

delivery. Instructor-dependent methods require ongoing delivery costs. Mediated programs costs are focused upfront during the development stages.

2. Flexibility in timing and delivery may be an important benefit. Self-instructional formats may allow the employee to perform the training during off-work hours or it may help the trainer to meet timing requirements in a situation in which training is offered simultaneously at multiple locations.
3. Certain media formats may provide more reliable and consistent delivery than other formats. For example, computer aided instruction will follow a consistent, predetermined format whereas instructor led training will vary from instructor to instructor and even delivery to delivery by the same instructor.
4. Media may improve learning by providing a variety of stimuli to the instructional process. Learning research has shown that 80 percent of learning occurs through sight, 10 percent through hearing, 5 percent through touch, and 5 percent through smell and taste. The more senses that can be used to deliver and reinforce the training, the more likely the learning will be retained (Clark & Clark, 1984; Sredl & Rothwell, 1987).
5. The use of media in instruction may serve to place the instructor in the role of a learning manager or facilitator

rather than being the lecturer or a similarly less interactive delivery role (Clark & Clark, 1984).

6. Visual media provide a controlled model of the training behaviors being studied, which may result in vicarious learning and learning through modeling and imitation (Clark & Clark, 1984).
7. Trainees can replay the instruction as often as required to learn detailed information or review modeled information until they can successfully perform the behavior (Clark & Clark, 1984; Sredl & Rothwell, 1987).

An important lesson, based on reviewing the literature and research concerning the use of media in training, is that the program should determine the media, not the other way around. The learning method that is the best method based on program objectives should be the basis for media-selection decisions. If a mistake is made, and the media dictate the design specification, then "the media tail wags the training method dog" (Clark & Clark, 1984, p. 3). This lesson is as important for the decision maker who selects a vendor program as it is for the program designer. Gilbert (1960) stated it this way:

> If you don't have a gadget called a teaching machine, don't get one. Don't buy one; don't borrow one; don't steal one. If you have such a gadget, get rid of it. Don't give it away, for someone else might use it. This is a most practical rule, based on empirical facts from considerable observation. If you begin with a device of any kind, you will try to develop the teaching program to fit that device. (cited in Goldstein, 1986, p. 20)

It is important that the medium matches both the learning method and the ultimate purposes of the program (Goldstein, 1986). "The best available basis for the needed matching of media with objectives...is a rationale by which the kind of learning involved in each educational objective is stated in terms of the learning conditions required" (Briggs, Campeau, Gagne, & May, 1967, p. 3).

In summary, it is clear that administrative and logistical considerations, such as budget constraints, location of learners, and accessible equipment, do influence the selection of media. The instructional outcomes are much more the result of design strategies and instructional methods, than of media selection. Although research may not support differences in training outcomes due to the effect of media, the importance of media to the training program should not be underestimated (Sredl & Rothwell, 1987).

Many of the questions associated with the selection of appropriate media during the design and development phases of a program are important considerations in the program-selection process. For example, should an overhead projector be used or should the instructor take the extra time to write major points on the blackboard? Sredl and Rothwell (1987, pp. 128-141) summarized these questions and other considerations associated with various media in the following list:

a. Overhead Transparencies
b. Opaque and Rear-Screen Projectors
c. Chalkboards, and Ceramic, Felt and Magnetic Boards
d. Flipcharts
e. Slides
f. Filmstrips

g. Motion-Picture Films
h. Videotapes
i. Interactive Videodisks
j. Audiotapes
k. Printed Material
l. Models, Simulators, and Real Equipment
m. Computer Software

Instructional Materials

Printed instructional materials represent the most commonly used media for instruction. Because of the importance of written materials in vendor-supplied training programs, they will be considered here in greater depth than other media. Sight is the major sense by which people assimilate information, thus, printed materials represent a critical medium for enhancing learning. Properly designed materials can add a professional flair to a program, can reinforce information presented by other means, and can provide participants with a way to review important concepts after the program is completed. Poorly designed and poorly prepared printed materials may detract from the learning presented in the training program.

In Models for Excellence, McLagan (1983) mentioned the following examples of printed materials that may be used in training:

1. Exercises, Workbooks, Worksheets
2. Teaching Guides
3. Manuals and Job Aids
4. Tests and Evaluation Forms
5. Written Role Plays, Simulations, Games
6. Written Case Studies.

Of concern to the present study are two issues: "What are the critical factors in evaluating printed materials?" and "What printed materials are important in a complete and effectively designed vendor-supplied training package?" The framework for this section will be considered on the basis of five factors identified by Burbank and Pett (1986) as important to using printed materials effectively:

1. Content
2. Writing Style
3. Typography
4. Illustrations
5. Page Organization

Content of printed materials includes aspects similar to the previous discussion of design factors: Do not include extraneous material, include all required material, and connect new ideas to previous knowledge. Issues that are specific to printed matter include:

1. Employing simple cueing devices that assist and direct readers as they move through the material.
2. Include an overview at the beginning of each section, as well as a summary at the end to identify important points.
3. Use questions to focus learner attention on key ideas.
4. Include examples and non-examples to clarify concepts better. (Burbank & Pett, 1986, p. 5)

Writing style can be evaluated using the following questions as guidelines:

1. Is the information presented in short, concise statements?
2. Is the reading level appropriate to the learners?

3. Is the vocabulary concrete and familiar to the learner?
4. Are new terms defined and examples given when possible?
5. Is wording consistent throughout the document?
6. Is active language used (particularly active present tense verbs)?
7. Are long lists divided into groups to facilitate remembering?
8. When the user must make choices, is continuous prose avoided and diagrams used instead?
9. Are visual or verbal analogies used to clarify key points? (Burbank & Pett, 1986, p. 6)

Typography deals with how legible the printed materials are and whether they conform to the findings of typographic research. Important aspects of this factor include:

1. Type Size. Sizes smaller than 9 points are hard to read, while sizes larger than 12 points tend to be viewed in parts and not as a whole.
2. Type Style. Any simple or sans serif typeface is satisfactory for instructional materials. The following considerations are useful in deciding on the type style to use:
   - Bold letters are more difficult to read.
   - Letters with a fine stroke width tend to be less legible than letters with a medium stroke width.
   - Condensed type should be avoided.
   - Capitalized sentences are more difficult to read than a line combining upper and lower case letters.
   - Use of one type style throughout a document increases readability.
   - Numbers should not be written out, but shown as numbers.
3. Spacing. The third factor to be considered in designing and evaluating legible text is spacing. The guidelines for acceptable spacing practices include:
   - Spacing between words should be consistent.
   - Leaving a space between lines increases readability.
   - Use spaces between paragraphs to make them stand out.

- Indenting the first word of a paragraph is not necessary.

4. Contrast. Maintain a high brightness contrast between print and background. Avoid dark-colored papers. Also avoid light letters on a dark background.
5. Line Length and Page Length. The optimal line will contain about seven words and be between 26 and 52 characters, with 39 optimum. Page length of 55 lines is oftentimes considered ideal. Right justification is not necessary, and may reduce readability for poor readers (Burbank & Pett, 1986, p. 6).

The fourth factor regarding printed materials is the use of illustrations. Because the attention of the reader is focused on the drawings, graphs, diagrams, or photographs, care should be taken to ensure that illustrations are relevant to the text. Learners tend to scan pictures; thus, only important details should be given. Simple illustrations work best, and the use of cues, such as arrows, to focus attention on critical points is helpful.

The final factor in creating and evaluating written instructional materials concerns page organization. A number of guidelines should be followed to assist the reader in comprehending the material:

1. The structure of the document should be consistent.
2. Logical order is critical and should be apparent to the reader.
3. Different ideas should be clearly separated. The exact format is less important than the ease with which learners can find information.
4. Long documents require a table of contents. (Burbank & Pett, 1986, p. 6)

The choice of page size and layout depends on many factors: the audience, the objectives, how and where the material will be used, and the cost. No matter what page size or layout is chosen, the

pages should be attractive and easy to read. The following guidelines may be helpful:

1. Use numbers, headings, bullets, indenting, spacing, or other graphic devices to lead the reader through the material in a logical order.
2. Make effective use of white space.
3. Assure that illustrations are visually related to the text.
4. A page should be visually balanced in order to appear attractive.
5. Maintain simplicity and avoid distracting elements. (Burbank & Pett, 1986, p. 6)

By following design principles, the trainer can increase the effectiveness of printed instructional materials. Because design principals do not represent an exact science, it is important to evaluate the materials during the formative evaluation stage (Burbank and Pett, 1986). Evaluation at this stage not only keeps the costs of making changes down, it adds to the effectiveness of the program.

What materials are required to make a program package complete? Typically, objective-based training program packages consist of four components:

1. A set of instructions for trainees,
2. An instructor's manual or guide,
3. A trainee workbook, and
4. Tests for each unit and/or lesson. (Dick & Casey, 1985)

Variables affecting the scope of each of these components include the following considerations:

1. To what degree is the program directed toward individualized and group-oriented presentation? Individualized programs, such as programmed instruction

or self-study packages, require considerably more detail and anticipation of nearly every problem, issue, or concern that might be encountered by the user. At the other extreme, group-oriented instruction may consist of an outline or series of questions. Probably the most versatile format is the verbatim script, which can be used in either individual or group situations.

2. To what degree is the program organization specific, that is, directed at the unique conditions found in only one organization, work group, job class, or position? Several disadvantages are associated with highly organization-specific programs: (a) they may be easily outdated as changes occur; (b) they may require a custom-design development process; or (c) they may need to be developed by in-house staff, resulting in potentially higher costs. At the other extreme is generalized education. A major disadvantage of more generalized programs is the increased difficulty in transferring the learning back to the job.

3. To what degree the program will be modified before or during each offering determines how comprehensive the program package must be. At one end of this continuum is material that is relevant to a single presentation; at the other end is a do-it-yourself kit, including needs assessment, course script, unit and lesson plans, visual aids, exercises, and the ability to modify the program

with little advanced skills in program design and development. (Sredl & Rothwell, 1987, pp. 154-158)

Each component may be considered against these three variables that affect the scope of the training.

A comprehensive list of what should be included in each of the components could assist a buyer in assuring that every element required by the purchasing organization has been considered. Obviously, many situations do not require that element, and some specific situations may require that an element be omitted. A master list for a comprehensive package intended for group presentation would contain the following items:

1. A brief description of the instructor's role in program delivery.
2. The sequence of desirable activities in preparing to offer the program.
3. The type of attendees for which the program is intended.
4. The means by which needs were (or can be) assessed.
5. The preparation of program handouts and visual aids.
6. How the presentation should be practiced.
7. Notes on room arrangement.
8. A checklist of equipment needed to offer the program.
9. Tests or other means by which to assess student performance.
10. Questionnaire(s) for use by participants in assessing instructor performance.
11. A text or script.
12. Transparencies or other visual aids needed for the presentation.
13. Copies of all handouts, exercises, trainee workbooks, and other program materials--including suggested solutions to exercises and tests.
14. Information about how the program has been revised--or recommendations on how it should be revised--and about trends in past trainee performance. (Sredl & Rothwell, 1987, pp.158-159)

A master list containing the minimal requirements for trainee workbooks would include the following:

- A statement of program title and purpose
- A summary of program objectives
- A program outline
- Copies of readings, handouts, and exercises
- Copies of important visual aids
- Copies of supplementary reading or additional information that might be of interest to participants
- Copies of any organizational policies and/or procedures related to program content (Sredl & Rothwell, 1987, pp.160-161)

Individualized workbooks would require additional information and also should include some type of test.

Organizational Influences on Training

An important aspect of any decision to purchase a vendor-supplied training program is the consideration of organizational factors. For example, McAllaster (1987) emphasized the importance of management commitment to the training effort. Strother and Klus (1982. pp. 45-46) described the individuals who are responsible for decision making as:

> constrained by available channels of information, organizational routines, and the physical limitations and biases of the people on whom they depend....Administration controls can also be factors....These constraints are internalized as organizational givens and decisions must be made within this framework. (cited in McAllaster, 1987, p. 60)

Perhaps the most important organizational factor to consider in making decisions concerning training programs is the consideration of corporate culture. Schein (1984) defined organizational culture as:

> the pattern of basic assumptions that a given group has invented, discovered, or developed in learning to cope with its problems of external adaptation and internal integration and that have worked well enough to be considered valid, and therefore, to be taught to new members as the correct way to perceive, think, and feel in relation to those problems (p. 3).

Allen and Silverzweig (cited in Craig, 1976) discussed the importance of understanding culture and its impact on participant receptivity to, and the subsequent effectiveness of, training efforts. The underlying assumptions in the organization determine its norms, and norms reflect the behavior associated with how the underlying assumptions are lived out in an organization. They are influenced by the following elements:

1. Leadership commitment--visible, verbal, and active support of behaviors. If a program is attempting to instill a new concept or management principle (such as teamwork), it must be supported by the organizational leadership.
2. Modeling behavior--prestigious members often serve as role models. Behaviors they exhibit will become readily accepted.
3. Information feedback--regular feedback reinforces norms. When information on a particular norm starts to diminish, it tends to become less important to members of the organization.
4. Recognition and reward--behavior that is rewarded will be repeated; if the reward continues over time, it becomes a norm.
5. Knowledge and skill development--lack of ability in demonstrating the skills or behaviors associated with a norm will cause it to diminish (for example, a supervisor who lacks skills in performance appraisal may not provide the appropriate recognition).
6. Orientation--the most teachable time for employees is when they are new to a position or company. New employee or promotion orientations that are left to occur

as an unstructured experience may expose the individual to norms that are opposite to organizational objectives.

7. Supervisory follow-through--supervisors are a key element to effective norm-maintenance or norm-change programs. What a supervisor supports is likely to be reinforced in the organization. (Allen & Silverzweig cited in Craig, 1976, pp. 12-3 to 17-5)

Training that is consistent with the organization's norms will be encouraged and rewarded, but training that violates norms will be confronted. The more the objectives of a training program run counter to the existing norms, the more critical it is that the above elements be considered as part of the change effort.

The degree of compatibility of the training with the culture is an essential factor in the assessment and analysis processes in the initial stages of determining the training need. If the existing norms are clearly understood and the norms that are relevant to the training need are clearly identified, the likelihood that the decision maker will be able to consider the cultural implications of purchasing a training program is increased. However, rarely are the values and norms of a particular training program explicit. Thus, skill in identifying the underlying values and norms inherent in a program is essential (see E. H. Schein, Organizational Culture and Leadership, Chapter 5: How to Uncover Cultural Assumptions in an Organization, 1985).

Four additional organizational factors that affect training were identified by Killian (1976):

1. Who is responsible and accountable in the organization to insure that training and development occurs;
2. What resources are made available or unavailable for training (budgets, trainees' time, etc.);

3. How training and development activities are integrated into the company's philosophy, goals, and operating practices; and
4. How decisions are made in the company that relate to what training activities are run. (pp. 111-113)

In addition, Nadler (1981) discussed several other factors that affect the direction, effectiveness, organization, and type of training programs held within a company. They include:

1. Who has budget control of training funds;
2. How attendance at training programs is determined;
3. Who is responsible for ensuring that learning is transferred from the class to the job; and
4. Who expects to see the results from training. (cited in McAllaster, 1987, pp. 63-64)

And finally, the following organizational factors that contribute to the failure of training efforts were listed by Spitzer (1984):

1. Training viewed as a fringe benefit;
2. Training as a quick fix for organizational problems;
3. Delegation of training responsibility from managers and supervisors to the training function;
4. Lack of management commitment;
5. Reluctance to hold training departments accountable;
6. Failure to identify the real training needs;
7. Lack of aids to transfer learning back onto the job;
8. Inappropriate trainees;
9. Lack of opportunity to use new skills on the job; and
10. Lack of follow-up after training. (pp. 6-10)

McAllaster (1987) offered the following summary of the organizational factors associated with training:

1. Internal controls on how training is administered;
2. How the "normative" system of the organization affects training;

3. How politics affects the training function and programing;
4. How the daily activities of the company affect training programming;
5. Constraints and barriers to training and development within the company;
6. The reputation of training in the company;
7. Whose responsibility it is to see that employees are adequately trained;
8. If the training department is held accountable for the programs it runs;
9. How and what determines the types of programs run within a company;
10. How attendance at programs is determined;
11. How the transfer of learning is insured in the company; and
12. How the future of the organization is expected to impact the organization. (pp. 68-69)

The following could be added to the above list:

13: How management commitment to the training effort is obtained and maintained.

Summary of the Literature Review

The factors associated with the decision to build a program in-house or to purchase a program from an outside source were considered and various sources that discussed the potential selection factors were reviewed. Sources in which external programs could be found or purchased were given. Finally, the factors associated with instructional development systems, training evaluation, instructional design and delivery, and organizational influences on training were described. This literature will serve as the basis of the model and instrument described in chapter 4.

CHAPTER THREE – METHODOLOGY

The methodology of this paper was determined by the need to provide a valid basis for developing and substantiating a program selection model and instrument. Future research that will be required to substantiate the model in practice remains beyond the focus of the present study.

Investigation Method

Because of the lack of research concerning the purchase of vendor-supplied programs, this topic will be developed theoretically. The model and instrument provided here are based on training theory that was revealed through a thorough review of the literature. Where research from related fields or subjects is applicable, appropriate use of that data is cited.

Research Basis

This investigation is based in the field of educational evaluation. Educational evaluation is defined by Borg and Gall (1983) as "the process of making judgments about the merit, value, or worth of educational programs, projects, materials, and techniques" (p. 733). Because the factors involved in the investigative process used to create the model and instrument for this study are similar to the factors involved in a decision maker's implementation of the model and instrument, they will be delineated in considerable detail.

The field of educational evaluation has provided important tools for policy analysis and development, the political decision-making process, and program management. Costs, benefits, and

problems of various program alternatives are prepared in the form of position papers for decision-makers to review during policy analysis. Increasingly, evaluation findings are being used by politicians in the political process to create support for or to advocate cuts in various educational programs. As a project management tool, evaluation research is used to determine costs, benefits, and efficiency ratings, so that managers can be held accountable for producing results. It is also used to generate data that will assist managers in making sound decisions regarding program design, personnel, and budgets (Borg & Gall, 1983). Thus, educational research has much in common with training evaluation and research.

Because of their importance in educational research, standards have been developed by which to judge the quality of educational evaluations. The Joint Committee on Standards for Educational Evaluation (1981) published criteria for a good evaluation study. The criteria are based on utility, feasibility, propriety, and accuracy.

> An evaluation has utility if it is informative, timely, and useful to the affected persons. Feasibility means, first, that the evaluation design is appropriate to the setting in which the study is to be conducted, and second, that the design is cost-effective. An evaluation has propriety if the rights of persons affected by the evaluation are protected. Finally, accuracy refers to the extent to which an evaluation study has produced valid, reliable, and comprehensive information about the entity being evaluated. (Borg & Gall, 1983, p. 739)

Thirty standards were established by which to operationalize each criterion. Borg and Gall (1983) created a list of the standards

regarding the criterion to which each standard is most closely related. Their list is useful as the basis by which (a) to evaluate the results of the present study, (b) to judge the soundness of previous evaluation models, and (c) to provide guidance for the individuals who implement the model and instrument developed here. These standards are listed below:

Utility

1. Audience identification. All of the audiences affected by the evaluation should be identified.
2. Evaluator credibility. The evaluator should be competent and trustworthy.
3. Information scope and selection. The questions to be answered by the evaluation should be pertinent and responsive to the affected audiences.
4. Valuation interpretation. The bases for interpreting the results and for making value judgments should be clearly described.
5. Report clarity. The affected audiences should find it easy to understand the evaluators' reports.
6. Report dissemination. Evaluation reports should be disseminated to all clients and right-to-know audiences.
7. Report timeliness. The evaluation findings should be reported in a timely manner.
8. Evaluation impact. The evaluation should be conducted so as to encourage appropriate action by the affected audiences.

Feasibility

9. Practical procedures. The evaluation procedures should be practical and minimally disruptive to participants.
10. Political viability. The evaluators should obtain the cooperation of affected interest groups and should keep any group from subverting the evaluation process.
11. Cost effectiveness. The benefits produced by the evaluation should justify the resources expended on it.

Propriety

12. Formal obligation. Obligations of all involved parties should be agreed to in writing.
13. Conflict of interest. Conflicts that arise in the evaluation process should be treated openly and honestly.
14. Full and frank disclosure. Evaluation reports should be direct and honest.
15. Public's right to know. The public's right to know about the evaluation should be assured whenever legally or ethically permissible.
16. Rights of human subjects. The rights and welfare of persons involved in the evaluation should be protected.
17. Human interactions. Evaluators should respect the worth and dignity of persons involved in the study.
18. Balanced reporting. The strengths and weaknesses of the entity being evaluated should be reported completely and fairly.
19. Fiscal responsibility. Expenditure of resources for the evaluation should be prudent and ethically responsible.

Accuracy

20. Object identification. All pertinent aspects of the entity being evaluated should be described.
21. Context analysis. All pertinent aspects of the conditions that surround the entity being evaluated should be described.
22. Described purposes and procedures. A careful record of the evaluation purposes and procedures should be kept.
23. Defensible information sources. Sources of data should be described in sufficient detail that their adequacy can be judged.
24. Valid measurement. A range of validated measures should be used in the data collection process.
25. Reliable measurement. The measures should have adequate reliability for their intended uses.
26. Systematic data control. Human error in data collection should be minimized.
27. Analysis of quantitative information. Analysis of quantitative data in an evaluation study should be

accurate and thorough, and should yield clear interpretations.

28. Analysis of qualitative information. Analysis of qualitative data in an evaluation study should be accurate and thorough, and should yield clear interpretations.
29. Justified conclusions. The conclusions of an evaluation must be based on sound logic and appropriate data analyses.
30. Objective reporting. Evaluation reports should be thorough and free of biases of pressure groups. (Borg & Gall, 1983, pp. 739-741)

Each standard is explained and illustrated by case studies in the Joint Committee's report. Clearly, the importance of each standard will change according to the situation. For example, a business may not consider the public's right to know as important or even relevant, whereas a public agency would.

Besides the failure to consider the above standards, sometimes other mistakes are made when evaluation research is conducted. The following list of evaluation errors will serve as a part of the basis by which to judge this investigation. The evaluator:

1. Ignores some standards relating to the utility, feasibility, propriety, and accuracy in designing an evaluation study (as mentioned before).
2. Fails to delineate all aspects of the program that is being evaluated.
3. Does not use measures that are directly linked to program goals.
4. Ignores possible side-effects not included in the formal statement of program goals.
5. Does not relate evaluation findings to decisions that need to be made about the program.
6. Does not consider alternative models of evaluation in designing a study.

7. Does not consider using both qualitative and quantitative instruments in designing a formative or summative evaluation. (Borg & Gall, 1983, p. 766)

Study Design

There were seven steps in this investigation. Step One was a review of the literature. This study was conducted to determine the criteria previously identified by experts and authorities as important to the vendor program selection decision. The literature search was expanded to include a review of related areas. A review of instructional development systems and program components assisted in determining key criteria in the development cycle, which could be evaluated before the program was implemented or pilot tested. Literature concerning training evaluation, the decision to build a program in-house rather than to purchase from an outside source, and sources of externally supplied programs were also reviewed. This activity resulted in a set of criteria that could be used during the selection process.

Step Two was to develop a simplified system by which a decision maker could make logical sense out of the identified criteria. After an analysis of the information derived from the literature search, the criteria were synthesized into four dimensions. Essentially, this synthesis occurred out of a creative process. If the criteria found in the literature could be logically mapped and accounted for by the model, the initial face validity of the model would be established.

To operationalize the model, Step Three required taking each criterion and operationally defining it based on a summary of the

applicable material found in the research and literature. In addition, information related to the importance of the criterion compared to other criteria was noted. Based on the importance of the criteria to the evaluator's particular situation, a weight was assigned each criterion. Receiving a low rating on a heavily weighted criterion might disqualify a program from any further consideration.

In Step Four, the critical information for each criterion was summarized and transferred onto an instrument. Worksheets were created to assist decision makers in reviewing a program, or set of programs, against each criterion identified in the model. The worksheet format included only as much information as would be required for a decision maker to make valid ratings of each program for each criterion.

An overview of the model and instrument are given in Figure 2. At the first position in the figure, the model is shown. At the second position, the model has been developed into a criteria selection checklist from which the program reviewer can select the criteria he or she is going to use in evaluating the programs. After selecting the criteria, a relative weight based on the importance of each criterion to the decision-making process is assigned. The third position in Figure 2 shows the worksheets that were developed to assist the reviewer in evaluating each of the selected criteria. For every criterion listed on the criteria selection checklist, there is a corresponding worksheet. The fourth position shows a summary worksheet, where data from the previously completed worksheets is pulled together. The ratings from previous worksheets are listed in

the appropriate column, multiplied by the weighting, and summed to achieve an overall rating for each program.

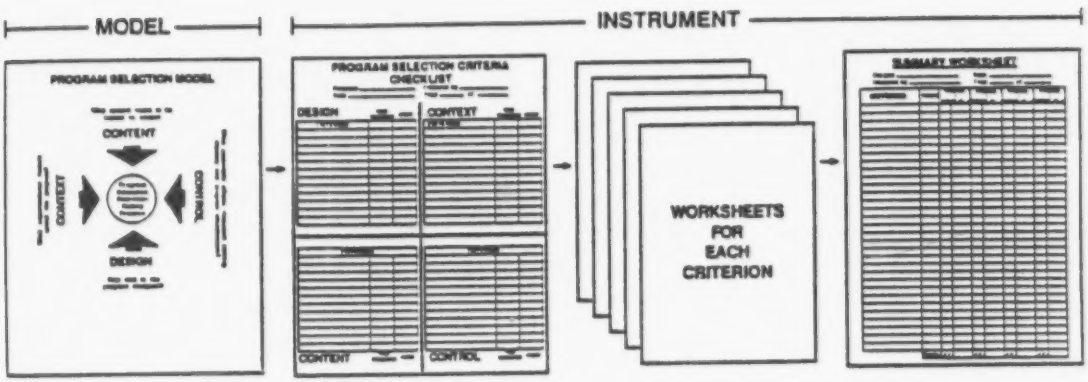


Figure 2--Overview of the Methodology

The purpose of this last position is to collect the data on each worksheet and make it into a decision matrix. This step requires that each criterion be scored according to a common scale, even though the criteria may be measured by different methods. The result of each worksheet is a rating of each program on each criterion considered to be important by the decision maker. For example, if four programs are compared, the program is assigned a rating scale from 1 to 4 for each criterion; 4.0 designates that the program met all requirements in an extraordinary manner, and a 0.0 designates that the program did not meet even minimal requirements. The ratings are then multiplied by the previously

assigned weights. These figures are summed and an overall rating for each program is reached.

In Step Five the model and instrument were analyzed for their strengths, weaknesses, and limitations. Finally, conclusions are presented and recommendations for further research are given.

Limitations

Limitations of this model include application, scope, and validity issues. Because the focus of this paper is theoretical, limitations from a practical approach are not considered. This paper only represents a theoretical attempt, based on the literature, to determine selection criteria and methods for rating programs against these criteria. The next stage of evaluation, which would represent a more practical focus, would follow one of several different avenues. The instrument could be tested by several practitioners in real-world situations. A study is needed to determine more accurately how the decision-making process is presently performed. Strengths and weaknesses of buying and using vendor-supplied training programs could be further researched. This practical test of the model and the instrument is beyond the present study.

The validity of the instrument and model could be assessed by comparing decisions made both with and without the use of the instrument. Other methods of program selection might be identified and compared with the model and instrument. The predictive and concurrent validity issues associated with the instrument will not be addressed in this investigation.

No information will be provided concerning the reliability of the instrument and model. Reliability could be assessed by first asking several training decision makers to use the instrument on the same set of programs and then by comparing their results. Another limitation of this study concerns the degree to which the model uses each of the criteria that are important to the selection process. This study will not assess content validity. The scope of this investigation will not include determining whether the study has identified an exhaustive list of criteria.

In addition to not testing whether the listing is exhaustive, very little will be discovered about the relative importance of the criteria. Are there some criteria that should be considered in every situation and other criteria that have little or no bearing on an individual program's effectiveness? This question will not be answered in this study.

Another limitation of the study concerns the availability of the information required to use the instrument. Will vendors be willing to provide decision makers with access to the information they need in order to perform this type of evaluation? This issue also will not be addressed.

CHAPTER FOUR -- SYNTHESIS

Before the criteria discussed in the literature review can be synthesized into a model and instrument for the selection of vendor-supplied programs, an overview framework to guide the synthesis discussion is needed. A logical approach would be to ask what steps would an individual or team follow, consciously or unconsciously, when making a decision to purchase a training program?

From a review of models concerning how people go about purchasing products and services, such a flow chart was made. Stanton (1987) provided a representative model of the purchasing process. When an aroused need or want occurs in an individual or group, actions are taken to satisfy that need or motive. The course taken is determined by the buyer's perceptions. The elements that influence the buyer's perceptions and frame of reference include cultural and psychological aspects. The cultural aspects that influence the buyer's perception include the culture, social class and social group, small reference groups, and family. The psychological aspects include learning experiences, personality, attitudes and beliefs, and self-concept. All of these factors interact in the formulation of the consumer's perceptions, which influences buying behavior.

The buying behavior is identified as a five-step problem-solving approach:

1. Recognition of an unsatisfied need
2. Identification of alternative ways of reducing tensions (i.e., achieving satisfaction)
3. Evaluation of alternatives

4. Purchase decision
5. Postpurchase behavior (Stanton, 1987, p. 115)

The buying, decision-making process is based on Dewey's rational problem-solving model (referenced in Conrad, 1985):

1. Set or determine a goal, based on a problem or situation requiring strategy;
2. Search for information relevant to the problem or strategy;
3. Develop alternatives to be considered in solving the problem or strategy;
4. Weigh the pros and cons of alternatives under consideration;
5. Choose the best alternative; and
6. Take action.

Dewey's rational individual process was applied to organizations' results in the following rational-actor model of organizational decision making:

1. Individual employees rationally assess goals, options, and possible gains and losses.
2. Individual employees participate in decision-making events, present varying viewpoints and expert information, and cooperate in making a rational decision.
3. Organizational decisions are made.
4. Decisions have effects which are known and understood by all parties, who store this information to be used in future decisions. (Conrad, 1985, p. 148)

The rational models cannot be relied upon because people and organizations are not totally rational. The manner in which people actually make decisions does not follow this process. Studies indicate that humans do not behave as rational actors, and, at best,

they only appear to act in ways consistent with this model (Conrad, 1985).

The question then becomes: How do people in organizations actually make decisions?

> Observations of actual human decision making, including organizational decision making, suggest that often we reverse the sequence, first making choices and acting on them and then seeking out the information and beliefs which will support them. We discover, for instance, that we have married a shortstop, and then determine that we value excitement and passion more than security. We make a decision that seems to be a correct one and then construct a picture of our decision-making process that makes us seem to be rational (Conrad, 1985, p. 153).

Various contingency theories of why and how people actually act in ways that are inconsistent with the myth of rationality have been presented. Karl Weick's model accounted for the nonrational or the limited or bounded rationality of people and systems by explaining that people first act or make a decision (enactment), next observe what it is that happened (selection), and finally construct an explanation of the action or decision (retention) (Weick, 1979). The garbage can theory of ritualized decision-making processes presented by March and his associates (Cohen, 1972) challenges the belief that the main focus of decision making is solving problems. The focus on solving problems often is compromised by the need to take action.

Whatever the focus, there is a need is to make complex problems more manageable. Conrad identifies three different styles by which decisions can be made: (a) <u>oversight</u> is to make a quick

decision because a problem will become even more complex if nothing is done; (b) flight involves avoiding making a decision until other people act, thereby reducing the complexity of the problem; and (c) resolution approximates the rational actor model discussed previously (Conrad, 1985). Thus, the decision-making process is determined, in part, by the complexity of the decision in question, by the likelihood of creating a favorable outcome, and by other organizational factors such as control mechanisms and history. Simple situations in which most of the information required to make a decision is readily available and finite in nature require a different problem-solving process than complex, ambiguous situations, in which totally rational decision making is impossible (Conrad, 1985).

Alan Meyer (1977) gave an example of how the rational and nonrational aspects of decision making occur in organizations in his study of how hospitals make capital-equipment purchasing decisions. The decision-making process began with an orderly consideration of the various objective aspects involved in making the decision: determining program needs, equipment costs, and projected payoff periods.

> In many of the episodes, the actions started to deviate from the rational model. Communication among participants became more vague and imprecise and started to focus on abstract and intangible topics, like the parties' shared beliefs, values, goals for the hospital and vision of its future. Later the decision makers began to restructure and redefine what actually had taken place during the deliberations so that they seemed to fit the myths of rational decision making. (Conrad, 1985, p. 163)

Two important purposes were served by this dual process. First, the members of the selection team were able to view themselves as tough but cooperative members of a functioning group. Second, the symbolic aspects of the nonrational methods of the decision-making process allowed them to gain a psychological closure on the process and a sense of unification as a group. In situations in which the focus remained on rational methods throughout the process, "the group seldom reunified. Dissension continued, debates proliferated, and in some cases key staff members resigned and expensive new equipment was left sitting in the basement" (Conrad, l985, p. 163).

Meyer's study shows that rational and nonrational processes serve decision makers in different ways. No matter how complex or ambiguous the decision, organizations do develop successful patterns of communications. But, two potential problems exist. First, no ideal model of communication or decision making can be imposed on an organization. Rather, strategies will only succeed "where they are appropriate, respect, and adjust to the complex patterns of action which have emerged in a particular organization" (Conrad, l985, p. 164). Second, organizations can become trapped in their successful patterns, and the flexibility and responsiveness to handle new situations may be diminished. An increased awareness of the communication patterns that have developed, a commitment to discovering new strategies to increase adaptability, and the ability to obtain and process the kind of information that casts doubt on perceptions, beliefs, and interpretations inherent in the system are needed to avoid these potential problems.

Following this discussion of purchasing behavior and decision-making processes, certain factors will need to be accounted for. In addition to the rational elements of the decision-making process that are assumed in the use of a model and instrument, allowances must be made for organizational factors. Also, deviations from the rational model are expected in most practical applications of the model and instrument.

Based on these considerations, the following flow chart illustrates a typical decision-making process for selecting a vendor-supplied program.

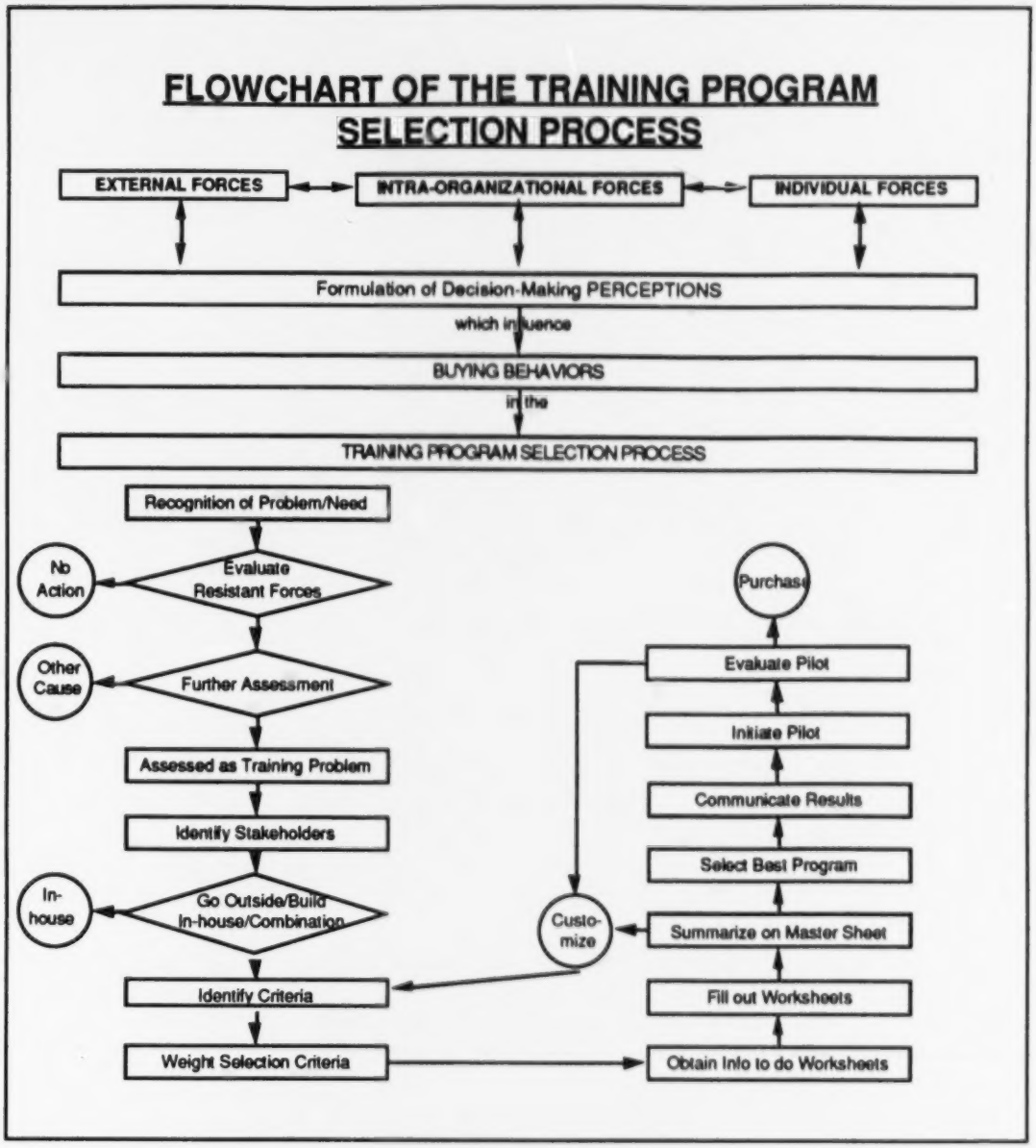


Figure 3--Flowchart of Proposed Program Selection Process

Three sets of forces are identified as interacting to influence the perceptions by which the training program buyer makes a decision: external, intraorganizational, and individual.

1. Individual forces include aspects associated with the personal and psychological characteristics of participants in the purchasing process.

2. Intraorganizational forces are associated with the nature of the organization and its influences (such as its culture, structure, and policies) on the purchasing process.

3. External forces are factors in the environment and society, such as outside reference groups and government regulations, that affect the purchasing process.

These three sets of forces work together in determining the perceptions and interactions of the buyer and seller in the sales process.

Learning relates to the previous buying experiences. Based on an individual's or organization's previous experiences, habitual responses are created that determine future buying patterns. Organizational purchases differ from consumer purchases because items such as training may not involve much trial-and-error decision making. The magnitude of such decisions makes the trial-and-error approach much too costly, and it is much less likely that it will be used.

Personality refers to the habitual patterns of traits that people develop that partly determine their actions. In situations involving face-to-face selling, as in selling and purchasing many training programs, the personalities of the people involved will be a key factor. How the salesperson's personality is perceived by the

purchasing organization will have a major effect on the purchasing decision.

Although organizational buyers tend to consider more objective criteria than do individual consumers, their attitudes and beliefs can still play an important role in the organizational decision-making process. Attitudes and beliefs refer to the long-term value judgments, feelings, and opinions that buyers hold about a product or service. These are formed from past learning experiences and relationships within reference groups such as work associates and family. For organizational purchases, factors associated with the vendor, (i.e., length of time in business) rather than those directly associated with the product (i.e., speed of delivery), play a larger role than in consumer purchases (Busch & Houston, 1985).

How the individual and organization see themselves is an important factor in the purchasing process. The self-concept or self-image includes both the actual way one sees oneself and the ideal way one would like to see oneself. A vendor that presents to the buyer in a manner that is consistent with the decision maker's or organization's self-concept stands a much higher chance of being selected.

Motives and commitments are based, in part, on the needs of the individual or organization. Products identified as consistent with the buyer's commitments and motives--as in cost reduction, return on investment, risk reduction, or increasing individual

status--contribute to the development of perceptions that influence behaviors in the buying process.

Another organizational factor influencing the purchasing process is culture. Culture includes the symbols, artifacts, and assumptions created by a given group and handed down from member to member as determinants and regulators of behavior. The culture includes intangible items, such as attitudes, beliefs, values, or languages, and tangible items, such as products, tools, or buildings. Culture can be conscious or unconscious. For the most part, it is a powerful and unconscious determinant of the cultural members' actions and thoughts. Likewise, the purchasing process is subject to the powerful, and for the most part, unconscious influences of the organizational culture. An organization develops a personality and a self-concept about what is acceptable behavior. For example, just as an older consumer would often not consider buying younger, more modern clothing, an organization that views itself as established and conservative would often not consider choosing flashy, modern training programs. Norms, policies, and structures operate to determine who makes the initial purchase decision, who approves the decision, who is responsible for implementing the decision, and other factors associated with purchasing and implementing a training program.

Where the organization is headed in terms of its stated mission, goals, visions, and strategies may be a powerful influence on the purchasing process. A company that is attempting to change directions and cope with massive change may consider alternatives

different from those that would be indicated by its present culture and self-concept.

Group processes play an important role in how team or committee selection decisions are made. Groupthink, or the process by which groups develop a desperate need to reach consensus at any cost, is one factor among many that may operate to undermine a group's decision-making processes (Janis, 1971).

In addition to the organizational and individual forces, external forces influence the formulation of decision-making perceptions. Worldwide competition and government actions represent large-scale external forces that influence the purchasing process. A reference group refers to the group of people who influence a person's attitudes, values, and behavior by establishing normative behavior patterns. These serve as a frame of reference to which the individual is expected to conform. Thus, the reference groups with which individuals and organizations identify provide smaller-scale influences on the purchasing process. Sociocultural factors influence individuals and organizations based on such sources as family, church, school, and language. Patterns, expectations, and norms may be influenced by such factors as amount of education, socioeconomic status, and shared values.

In summary, individual, organizational, and external forces influence the formulation of decision-making perceptions. Buying behaviors are based on these perceptions, and these perceptions have an impact on the training program selection process.

Not all selection criteria will have the same impact on the purchase decision, which means that the criteria must be weighted in some manner. Certain criteria may be critical: If the program is unable to satisfy such criteria, it will not be considered. Other criteria may be less critical, or even optional, to the program's effectiveness. If these less critical criterial are included in a particular program, it may be rated higher than programs not including them.

Outside suppliers of programs must be identified and contacted for needed information. Based on the criteria selected, the program supplier will be asked specific questions about the program and requested to supply information sufficient to fill out the worksheet questions associated with the selected criteria. After the individual worksheets have been filled out, the data are transferred to a master worksheet to determine the highest rated program. If none of the programs qualifies by meeting the minimum requirements, the best of the nonqualifying programs may need to be customized in-house to meet the selected criteria.

At this stage, the selected program can be pilot-tested. If the program meets the requirements in actual practice, it can be purchased and implemented. It should be noted that meeting the criteria selected thus far does not imply that the program will be effective. Although the evaluation processes up to this point are designed to increase the probability of selecting the most effective and efficient program, there is no guarantee that this will be so.

Criteria in Four Dimensions

Certain aspects of the training program selection process were discussed in the literature review. Sources of externally-produced programs and factors associated with the build in-house or buy-outside decision also were discussed. The next critical steps are selecting the criteria, weighting the criteria, filling out the worksheets, summarizing the information on a final worksheet, and, finally, making a decision.

The factors and criteria identified in the literature as important to evaluating a vendor-supplied program can be clustered around four dimensions:

1. Content Factors. How well does the content of the program fit the identified training needs of the purchasing organization?

2. Design Factors. How well are solid instructional design and delivery methods utilized in the program? Are they consistent with the program content? Do they fit the requirements of the purchasing organization?

3. Control Factors. How much research went into the development of the program? Has it been evaluated for effectiveness?

4. Context Factors. How well does the program fit the administrative aspects of the purchasing organization? How does the vendor's company or organization rate in being able to meet the needs of the buyer?

The review of instructional development systems follows the same four dimensions. The Training Technology System contained phases that were associated with the content dimension (analysis

phase), design dimension (design and develop phases), context dimension (implement phase), and control dimension (control phase). The matching of the content of the program with the needs of the purchasing organization requires a competent needs assessment and analysis in order to provide the data needed to make the content/needs comparison. The design and develop phases include the program design, lesson design, lesson plan, and training materials development. The program management plan and factors involved in the delivery of the training are associated with the context dimension. The control phase emphasizes training evaluation, effectiveness evaluation, and follow-up training, which are associated with the control dimension.

The review of the literature on instructional design and delivery revealed a list of criteria to consider in the design dimension. Instructional system factors of objectives, content structuring, instructional sequencing, and adherence to principles of adult learning and the implementation factors of rate of delivery, repetition and practice, motivation, reinforcement and rewards, presentation methods, media planning, and instructional materials appear to meet the requirement of the design dimension. Other factors associated with testing and measuring performance and transfer of learning to the job could be considered part of both the control dimension and the design dimension. Because the ultimate value of each of these factors deals more directly with training effectiveness and evaluation, they will be considered from the perspective of the control dimension. Trainee characteristics and

trainee readiness are compared on the basis of program intent. This comparison is similar to the content/needs comparison and will be considered in the content dimension, even though trainee characteristics and trainee readiness also are important to design.

Context, in this sense, refers to the criteria, not considered in other dimensions, that are important to the selection process. The discussion of organizational variables as well as the organizational influences on the purchasing decision-making process are important issues in the context dimension. In addition, issues in the vendor's organization are also critical to the selection process. These issues, as identified in the literature concerning the build in-house or purchase outside decision-making process, also will be included in the context dimension.

This information may be summarized in the following selection criteria model:

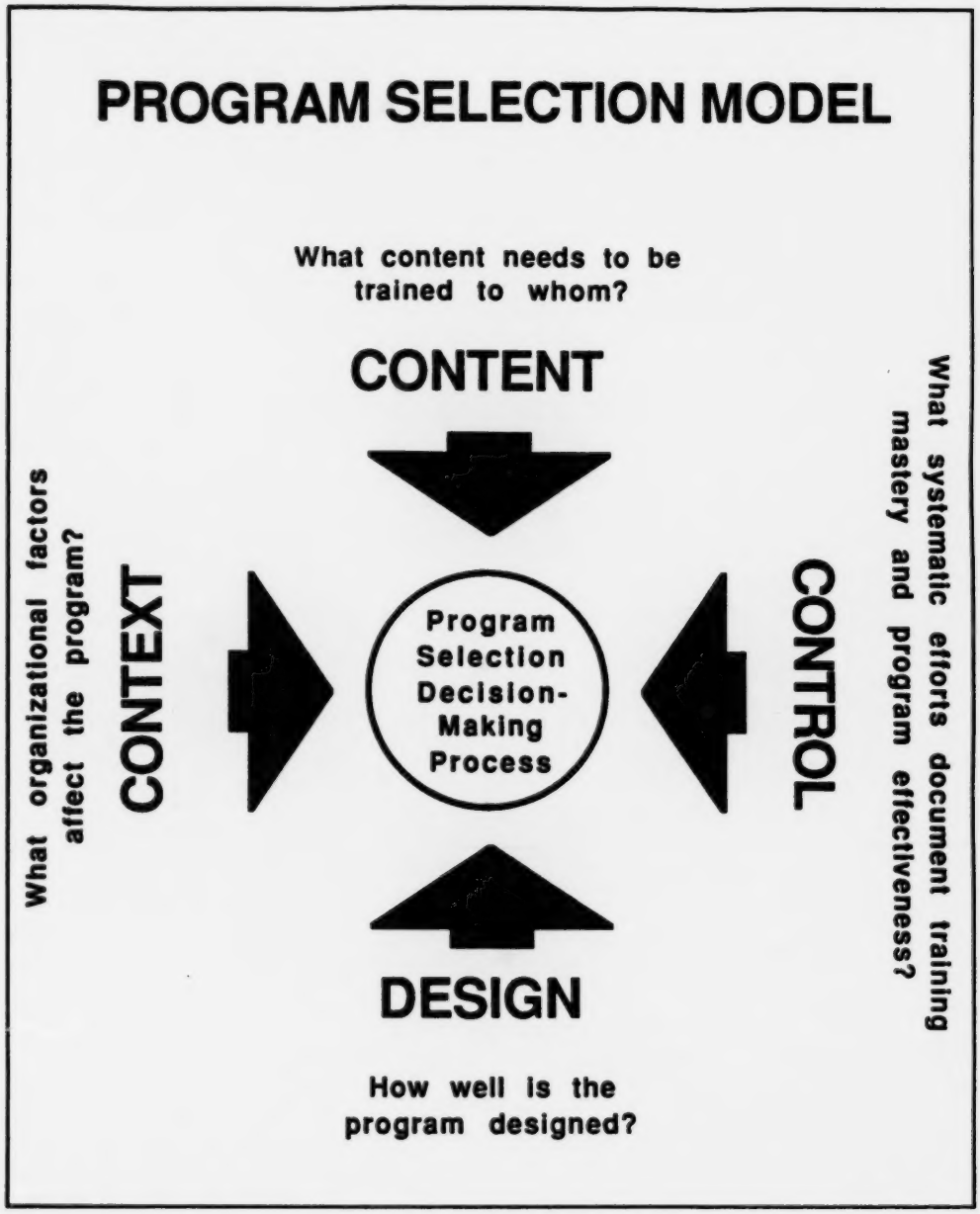

PROGRAM SELECTION MODEL
What content needs to be trained to whom?
CONTENT
What organizational factors affect the program?
CONTEXT
Program Selection Decision-Making Process
CONTROL
What systematic efforts document training mastery and program effectiveness?
DESIGN
How well is the program designed?

Figure 4--Program Selection Model

Several of the models reviewed earlier advocated certain processes by which the purchasing organization could better evaluate each of the factors that are important to the decision-making process. This

information could serve as the basis for developing the model into an instrument that can be used by decision makers to select vendor-supplied training programs.

Development of the Training Program Selection Instrument

Two of this study's objectives have now been met: (a) the literature associated with various aspects of the decision-making process used in selecting a vendor-supplied training program has been reviewed and (b) the organization of the criteria into the Training Program Selection Criteria Model has been accomplished. The next phase of this study is: (a) to develop a process for assessing each of the criteria identified and (b) to provide a method by which to summarize the assessed data. Pilot-testing both the instrument and this process to determine its validity and reliability will be conducted in a later study.

To translate the model into a selection instrument, a checklist of the identified criteria was created:

PROGRAM SELECTION CRITERIA CHECKLIST

Program _____ Prepared by _____
Date _____ Page _____ of _____

DESIGN

CRITERION	TO BE CONSIDERED	WEIGHT
Objectives		
Structuring the Content		
Instructional Sequencing		
Adult Learning Principles		
Rate of Delivery		
Repetition and Practice		
Reinforcement/Rewards		
Presentation Methods		
Media Planning		
Instructional Materials		

CONTEXT

CRITERION	TO BE CONSIDERED	WEIGHT
Price		
Ability to Deliver		
Cultural Fit		
Instructor Training		
Vendor Capability		
Customization		

CONTENT

CRITERION	TO BE CONSIDERED	WEIGHT
Needs/Content		
Subject Matter Review		
Trainee Characteristics		
Trainee Readiness		

CONTROL

CRITERION	TO BE CONSIDERED	WEIGHT
Transfer of Learning		
References Rating		
Testing/Measurement		
Needs Assessment		
Evaluation Research		

Figure 5--Training Program Selection Criteria Checklist

In any selection process, certain criteria may be selected as important, whereas other criteria may not be given as much, if any, consideration. Of the criteria selected as important, some may be considerably more important than others. How to use the selection checklist and assign an appropriate weight to each of the selected criteria will be considered in more detail in the following sections.

Selecting and Weighting the Criteria

How does the reviewer determine which criteria are relevant to the program selection process? After selecting relevant criteria, how does the reviewer determine what weight to assign each criterion? The Joint Committee on Standards for Educational Evaluation (1981) stated that a high-quality evaluation was judged on the basis of its utility, feasibility, propriety, and accuracy. The basis for selecting and weighting the criteria that are important to the selection process must be chosen with these considerations in mind.

The utility of the criteria selected is based on who will make use of the information generated by the evaluation process. This may be an individual, but most probably it will be a group of people who have some stake in the training program selected, that is, stakeholders. Only the criteria identified by the stakeholders as relevant and important to the decision-making process are used for evaluating programs.

The utility, in many respects, is best represented as an evaluation design question. The key factor in evaluation design, in terms of the program evaluation literature, is to determine "what

information should be collected for what purposes to answer what questions" (Brinkerhoff, Brethower, Hluchyj, & Nowakowski, 1983, pp. 77-78). "The key is to match the type(s) of evaluation to the information needs of specific stakeholders and intended information users" (Patton, 1986, p. 149).

Feasibility issues are associated with how important the selection decision is to the organization. If a program will be used only once, have a small attendance, and address an issue that is not very important, the energy and costs associated with the evaluation should be kept low. Reducing the time, energy, number of criteria selected, and depth with which the criteria would be reviewed will reduce the cost of evaluation. On the other hand, for programs that represent a major investment on the part of the organization and address a critical business concern, considerably more criteria may be examined in greater detail.

In addition to utility and feasibility, the issue of propriety must be addressed, that is, that the rights of all persons affected by the evaluation are protected. For example, a study of low achievers in an organization would show propriety if lists of the involved employees were not made known to the public. In addition, accuracy must be maintained to assure the validity of overall process.

Again, the weight assigned to each criterion is determined by the stakeholders. Certain criteria may represent nonnegotiable items that must be present in the selected program. Obviously, these killer criteria would be weighted the highest (closer to 100). Other criteria may not be as important, and would be appropriately

weighted at lesser amounts (90, 80,...10). Totally unimportant criteria would be rated 0. A weighting scale from 0 to 100 is one possibility, and buyers could develop other rating scales based on their own requirements.

Evaluation of the Criteria in the Content Dimension

In the content dimension, the major focus should be on how well the content of the program fits the content needs that were identified as important to the purchasing organization. In addition, the characteristics and readiness of the trainees must be compared with the program's assumptions concerning these two factors. The vendor may offer the capability of performing a needs assessment for the purchasing organization or may provide tools for the purchasing organization to perform its own needs assessment.

Content/Needs Comparison

The most important criterion in this dimension is the content/needs comparison. If the selected program will not solve the training problem, no matter how exciting or low-cost, it will make little difference in the buyer's organization. A proposed worksheet to assess this comparison is as follows:

CONTENT/NEEDS COMPARISION WORKSHEET

Program _____ Prepared by _____
Date _____ Page _____ of _____

ORGANIZATION NEEDS	Weighted Importance	Program 1 Rating	Weight - Rating = _X_	Program 2 Rating	Weight - Rating = _X_	Program 3 Rating	Weight - Rating = _X_	Program 4 Rating	Weight - Rating = _X_
		Program 1		Program 2		Program 3		Program 4	
CONTAMINATION - Total negative scores									
DEFICIENCY - Total positive scores									
RATING:									

1 = Barely Important/Just Mentioned
2 = Not very Important/Mentioned
3 = Important/Covered in some depth
4 = Critical Need/Major focus

Figure 6--Content/Needs Comparison Worksheet

To perform this comparison, these steps are followed:

1. The needs as established in the needs assessment are listed in the left-hand column.
2. Each of the needs is then weighted in terms of its importance on a 4-point scale, with 4 being most important and 1 being least important. The number 0 is reserved for content contained in the programs, but not mentioned as important during the needs assessment.
3. Each program under consideration is then reviewed to determine how well it addresses each of the listed needs. The programs are rated by a similar 4-point scale, with a 4 given if they cover the need in great depth and a 0 given if the need is not considered at all.
4. Then content that is addressed in the programs but not listed on the needs assessment is added to the list. The weighted importance is rated as a 0, because the content is not important to the organization. A rating is listed under the program column based on how much emphasis is given that need or subject in that program.
5. The negative scores for each column are summed and placed in the appropriate box. This represents a content contamination score for each program.
6. Likewise, the positive scores in each column are summed and placed in the appropriate box. This represents a content-deficiency score.

7. Next all the 1s and the 4s are reviewed. Needs identified as critical to the training but not met by any of the alternative programs should be reviewed to determine if any of the programs would be acceptable as is; if they are not acceptable as is, new programs must be identified or one of the programs must be customized to meet the critical needs. Likewise, the content-contamination aspects should be considered to determine what design changes are required in order to delete them from the program.

8. Based on the scores and information concerning the above evaluation, the programs are given an overall rating on the 4 to 1 scale, and the program that provides the best content based on the organization's needs receives a 4. This average rating could be reached by first adding up the values of the individual scores and then dividing that number by the total number of scores.

Trainee Characteristics and Trainee Readiness

The worksheet for comparing trainee characteristics and trainee readiness with the trainee characteristics for which the program is designed and the prerequisite knowledge is shown in the following figure. Prerequisite skills, knowledge, abilities, and characteristics of the trainees are listed on the sheet. Each program is then assessed according to the factors of trainee readiness and trainee characteristics. For example, the factors that could be considered for a class of machinists or craft workers might

include a high-school diploma, additional vocational technical training, an average of 3-5 years experience, no previous training in time management, and a general dislike of paperwork. Further, trainees may perceive "soft" skill training as unimportant.

WORKSHEET TO ASSESS TRAINEE CHARACTERISTICS AND TRAINEE READINESS

Program _____ Prepared by _____
Date _____ Page _____ of _____

	PREREQUISITE SKILLS/KNOWLEDGE/ABILITIES/CHARACTERISTICS	PROGRAM RATING 1	2	3	4
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
	OVERALL RATINGS				

Rating System: 4 = Highest to 1 = Lowest

Figure 7--Trainee Characteristics and Trainee Readiness Assessment Worksheet

Subject Matter Expert

Sometimes a subject matter expert may be called in to review the accuracy and completeness of the technical information contained in the programs under consideration. The following worksheet includes questions designed to assist this expert. After answering the questions, this expert will be able to rate the programs and summarize the observations. The data on which the review is performed may be acquired by reading the materials for the programs, attending the programs in question, speaking with an instructor or designer of the program in each vendor's organization, or contacting previous users.

SUBJECT MATTER REVIEW WORKSHEET

Program _____ Prepared by _____
Date _____ Page __1__ of __5__

Rate each program on a four-point scale, based on how well the content of the program adheres to the following questions:

	Program			
	1	2	3	4
1. How accurate and correct is the information? (4 = totally accurate to 1 = many inconsistencies) Comments:				
2. How complete is the information given? (4 = totally complete to 1 = major gaps) Comments:				
3. Does the program contain any unnecessary information? (4 = none to 1 = very much) Comments:				
4. Is the material at the appropriate level of difficulty for the target population? (4 = appropriate to 1 = way too easy or difficult) Comments:				
Totals for page 1				

Figure 8--Subject Matter Review Worksheet (Page 1)

SUBJECT MATTER REVIEW WORKSHEET (continued)

Program _____ Prepared by _____
Date _____ Page __2__ of __4__

	Program			
	1	2	3	4
5. How accurate are the exhibits, charts, diagrams, and media? (4 = totally accurate to 1 = not accurate) Comments:				
6. How relevant are the case problems to the expected performances? (4 = totally relevant to 1 = irrelevant) Comments:				
7. Is the content the most up to date available? (4 = state-of-the-art to 1 = dated) Comments:				
8. Does the program contain content that does not conform to company standards and procedures? (4 = nothing to 1 = a lot) Comments:				
Totals for page 2:				

Figure 9--Subject Matter Review Worksheet (Page 2)

SUBJECT MATTER REVIEW WORKSHEET (continued)

Program _____ Prepared by _____
Date _____ Page ___3___ of ___5___

	Program			
	1	2	3	4
9. Is the material presented logically and in a way that is easy to follow? (4 = yes to 1 = not at all) Comments:				
10. Does the program give trainees a chance to test how well they have learned the material? (4 = yes to 1 = not at all) Comments:				
11. Do the student materials assist the learning and provide a take-home reference guide? (4 = excellent materials to 1 = bad materials) Comments:				
12. Will a person completing this program be able to perform what he or she has learned back on the job? (4 = definitely yes to 1 = definitely not) Comments:				
Totals for page 3:				

Figure 10--Subject Matter Review Worksheet (Page 3)

SUBJECT MATTER REVIEW WORKSHEET (continued)

Program _____ Prepared by _____
Date _____ Page __4__ of __5__

	Program 1	2	3	4
13. Are all terms explained and is a glossary provided? (4 = yes to 1 = not at all)				
14. Is there a bibliography and are references given when appropriate? (4 = always to 1 = none) Comments:				
15. Are performance aids given where appropriate to reduce unnecessary study and learning? (4 = excellent aids given to 1 = no aids given) Comments:				

OVERALL RATING BASED ON:

4 = Acceptable As Is
3 = Acceptable with Minor Revisions
2 = Acceptable with Major Revisions
1 = Not Acceptable

ADDITIONAL COMMENTS GIVEN ON NEXT PAGE.

Totals for pages:	4				
	1				
	2				
	3				
Overall Totals					
OVERALL RATING					

Figure 11--Subject Matter Review Worksheet (Page 4)

SUBJECT MATTER REVIEW WORKSHEET (continued)

Program _____ Prepared by _____
Date _____ Page ___5___ of ___5___

Additional comments or recommended changes or revisions:

Program 1:	Program 2:
Program 3:	Program 4:

Based in part on information from Charles F. Martinetz's "Checklist for Evaluation," Performance and Instruction Journal, June/July 1986, pp. 13-15.

Figure 12--Subject Matter Review Worksheet (Page 5)

Evaluation of the Criteria in the Design Dimension

Objectives

The following two worksheets are based on the discussion of the literature concerning objectives; they are presented first to assess each program's stated objectives and second to summarize the results for multiple programs. Each objective is listed down the left-hand column, then the appropriate squares are checked off, depending on where the objective is found, what type of an objective it is, and whether it is stated in measurable and observable terms.

OBJECTIVES ANALYSIS WORKSHEET

Program _____ Prepared by _____

Date _____ Page _____ of _____

	↓ OBJECTIVE ↓	WHERE: Student Mat'ls	WHERE: Leader's Guide	TYPE: ENABLING: Skill	TYPE: ENABLING: Attitude	TYPE: ENABLING: Cognitive	TYPE: TERMINAL	Measurable/Obsv
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
	TOTALS							

Figure 13--Objectives Analysis Worksheet

In addition, the following worksheet allows the reviewer to take the information from the Objectives Analysis Worksheet and add it to the Objectives Comparison Summary Worksheet in order to make an overall rating of the programs under consideration. In addition to listing the number of objectives present, the reviewer can use this worksheet to determine what percentage of each type of learning domain should be in the program and then compare the programs on how well they meet that ratio. An example of this would be as follows: the relative importance of attitude toward customer or product or service, selling skills, and knowledge of product or service to a salesperson's success was determined in a particular situation to be 48 percent/25 percent/13 percent, respectively (Kerr & Burzynski, 1988). Yet the sales programs in the same situation emphasized skills/knowledge/attitudes at 56 percent/43 percent/1 percent for newly hired salespersons and 65 percent/35 percent/0 percent for salespersons with 1-3 years experience. None of the programs could be rated very high in meeting the actual need for product knowledge, but one of the programs reviewed might be slightly better than the others. At this point, the program could be given a slightly higher rating, the program could be customized to provide the required product knowledge training, or a new program could be found that better meets the requirements.

OBJECTIVES COMPARISON SUMMARY WORKSHEET

Program _____ Prepared by _____
Date _____ Page _____ of _____

	Program 1	Program 2	Program 3	Program 4
Number Present				
Number Measurable/ Observable				
Skill/Attitude/Cognitive Percentage Comparison				
Skill/Attitude/Cognitive Ratio Rating				

Rating System: 4 = Highest to 1 = Lowest	Program: 1	2	3	4
Overall Rating:				

Figure 14--Objectives Analysis Summary Worksheet

Group Presentation Methods

The literature review yielded an extensive list of group presentation methods. A variety of methods will help to maintain trainee interest, and the methods that optimize the learning in the group can be selected. The leader's guide for each program can be scanned to consider how many methods were used in that program. Although the worksheet does not require that the methods be rated, the reviewer could rate the program in terms of what methods are used and how appropriate they are based on the content and learning objectives.

A program that incorporates lecture without demonstration to teach participants a work routine that primarily calls for using psychomotor skills and cognitive skills would not rate high. On the other hand, a program that is intended to change trainee's attitudes as well as to have them gain skills may incorporate many different methods, such as case studies, role plays, structured discussions, and simulations, to provide continuous stimulation and a high level of personal involvement. This program would rate high in terms of presentation methods.

The number of different methods used in a program serves as a measure to indicate how well the program should be rated on this criterion. The appropriateness of the method to the content should also be considered. The following worksheet allows the reviewer to check off the methods used in each program.

GROUP PRESENTATION METHODS

Project _____ **Date** _____

Prepared by _____ **Page** _____ **of** _____

Method	Program 1	Program 2	Program 3	Program 4
Lecture				
Reading				
Demonstration				
Field Trips				
Note Taking				
Open-Forum Discussions				
Structured Discussion				
Panel Discussion				
Case Studies				
Question-Answer Sessions				
Performance Tryout				
Brainstorming				
In-Baskets				
Incident Process				
Action Mazes				
Team Tasks/Buzz Groups				
Agenda-setting Buzz Groups				
Roleplays				
Reverse Roleplays				
Doubling Roleplays				
Rotation Roleplays				
Hot Roleplays				
Jigsaws				
T-Groups				
Simulations				
Games				
Clinics				
Critical Incident				
Programmed Instruction				
Fishbowls				
Other				
Totals				
OVERALL RATING				

Figure 15--Group Presentation Methods

Quality of Instructional Materials

In order to review the quality of the printed instructional materials, the following worksheet assists the reviewer in considering the categories of writing style, typology, packaging, page organization, and use of illustrations. Each category contains a list of possible factors to consider (Burbank & Pett, 1986). Based on this information, the reviewer can summarize the information into an overall quality of instructional materials rating for each of the programs under consideration.

A low rating on writing style may indicate materials that are too difficult to read, that confuse the learner, or that insult his or her intelligence. A low rating on typology may indicate material that is fatiguing to the eyes. The wrong type size or the wrong style can interfere with the trainee's deciphering the message. A low rating on packaging may suggest that materials that are important for on-the-job applications may not hold up under such conditions. A low rating on page organization may indicate that materials lack continuity of design, such as headings that are not of the same type size in different chapters. A low rating on the use of illustrations may indicate materials that do not focus on the critical elements of the instruction in a manner that is readily understandable. The ratings from each of the above categories are then combined by the reviewer to reach an overall rating for each program.

QUALITY OF INSTRUCTIONAL MATERIALS WORKSHEET

Project _____ Date _____

Prepared by _____ Page ___ 1 ___ of ___ 2 ___

Rating System: 4 = high to 1 = low

Writing Style:

	Program: 1	2	3	4
Adapts to learners' reading level				
Uses short, concise statements				
Uses concrete, familiar language				
Defines new terms				
Uses examples when possible				
Uses consistent wording				
Uses active language				
Employs "you" appropriately				
Divides long lists into groups				
Uses diagrams				
Uses verbal analogies				
Total				

Typology

	Program: 1	2	3	4
Type size and spacing				
Typeface and style				
Line and page length				
Contrast				
Total				

Packaging

	Program: 1	2	3	4
Size				
Cover styling/attractiveness				
Cover material				
Quality of paper				
Binding				
Total				

(continued)

Figure 16--Quality of Instructional Materials Worksheet (Page 1)

QUALITY OF INSTRUCTIONAL MATERIALS WORKSHEET (continued)

Project _____ Date _____

Prepared by _____ Page ___ 2 ___ of ___ 2 ___

Page Organization

	Program: 1	2	3	4
Layout similar from page to page				
Logical order apparent to learner				
Numbers, headings, bullets, etc. used				
Different ideas clearly separated				
Table of Contents used				
Index used				
White space used effectively				
Non-text elements related to text				
Pages visually balanced				
Simplicity of overall design used				
References/Bibliography used				
Total				

Illustrations

	Program: 1	2	3	4
Relevant to content				
Fit learners' capabilities				
Easily understood				
Focus learner's attention quickly				
Relate parts logically				
Appropriate level of complexity used				
Learner identifiable cues used				
Color used				
Total				

OVERALL RATING SUMMARY

	Program: 1	2	3	4
Writing Style				
Typology				
Packaging				
Page Organization				
Illustrations				
Overall Rating				

Figure 17--Quality of Instructional Materials Worksheet (Page 2)

Structuring the Content

A review of each program's structure begins by creating an outline. Often there will not be an outline in the program materials and it must be created by the reviewer. An overview of the main elements that form the model on which the program is based can be considered, and they can be diagrammed or listed on the following worksheet. Examples of questions to consider in rating each program on this factor include: (a) Does the structure allow the trainee to relate the content to previous knowledge? (b) Does content structure minimize confusion for the trainees? and (c) Does the content structure make it easy for the trainee to conceptualize the training, thus increasing the likelihood that he or she will remember and apply the training on the job? The instructional sequencing factor considered on the next worksheet addresses the nuts and bolts of how the training program is put together. In it, emphasis with structure is on the larger picture, the basis of the program's conceptualization that gives direction to the implementation strategy.

CONTENT STRUCTURING WORKSHEET

Program _____ Prepared by _____
Date _____ Page _____ of _____

Create a diagram or outline of how each program is structured.

Program 1:

Program 2:

Program 3:

Program 4:

	Program:			
	1	2	3	4
Overall Rating:				

Figure 18--Content Structuring Worksheet

Instructional Sequencing

In addition to considering the structure on which the program is modeled, an evaluation of how the program is sequenced can be made using the following worksheet. A set of sample sequencing strategies is listed at the top. By reviewing the program materials and outline, a diagram or list can be made of how and what type of sequencing strategy has been used to implement the program. Questions to consider in arriving at the overall rating for each program include: (a) How easy will it be for the trainees to follow the program conceptually? (b) How will the trainees react to the sequencing strategy experientially? and (c) Is the sequencing strategy appropriate for the content?

As with content structure, the comparison of several different programs will heighten the reviewer's understanding and ability to rate the differences. Just as American managers gained considerable insight into their profession by comparing themselves with Japanese managers, comparing programs will result in an increased understanding of each aspect of the programs. In this case, the first sequencing strategy considered may appear good enough to the reviewer, but when compared to a different strategy, the reviewer may gain new insight into why one strategy may be more appropriate than another.

INSTRUCTIONAL SEQUENCING WORKSHEET

Program _____ Prepared by _____
Date _____ Page _____ of _____

How are the elements of the program sequenced?

- Logically
- Step-wise progression
- Whole-part-whole
- Key questions
- Inductive (experiential)
- Problem-oriented

Program 1:

Program 2:

Program 3:

Program 4:

	Program:			
	1	2	3	4
Overall Rating:				

Figure 19--Instructional Sequencing Worksheet

Rate of Delivery

Rate of delivery concerns both the speed at which the program is delivered and the size of each instructional segment. How fast a program should be delivered depends on several variables, such as trainee characteristics factors, trainee readiness factors, importance of the instruction, and complexity of the material presented. Instruction that is delivered too fast or too slow may frustrate the trainee, resulting in less effective training. Instruction that is sized into very large segments may confuse trainees unnecessarily or require a concentration level beyond the trainees' capabilities. The following worksheet allows the reviewer to consider each element in arriving at an overall rating for each of the programs being considered.

RATE OF DELIVERY WORKSHEET

Program _____ Prepared by _____
Date _____ Page _____ of _____

What is the expected rate of learning?
How appropriate is the rate of learning to the content?

Program 1:

Program 2:

Program 3:

Program 4:

How large is each instructional "piece"?
Is each instructional "piece" appropriately sized?

Program 1:

Program 2:

Program 3:

Program 4:

	Program:			
	1	2	3	4
Overall Rating:				

Figure 20--Rate of Delivery Worksheet

Repetition and Practice

The purpose of practice is to reinforce the training. By providing actual experiences with the program, trainees are more likely to apply the skills or knowledge successfully. The purpose of practice and repetition in training is to translate the knowledge gained into effective action. In highly effective training, trainees are not just passive elements; instead, they are integral parts of the program. In effective training, trainees are actively involved in the learning process.

The repetition and practice worksheet allows the reviewer to consider how practice will be conducted in various programs. To what degree does the program allow the trainees to experience and practice the learning? The following worksheet compares programs on the basis of what will comprise the practice, how the practice compares to the actual experience, and how the trainee is given feedback on his or her performance. This information is then combined into an overall repetition and practice rating for each program. A high rating on this factor increases the likelihood that the trainees will use the training on the job.

REPETITION AND PRACTICE WORKSHEET

Program _____ Prepared by _____
Date _____ Page _____ of _____

What will the practice consist of?
Is it an appropriate amount, too little, or too much?

Program 1:

Program 2:

Program 3:

Program 4:

In what ways will the practice performance differ from the actual job performance? Are the differences acceptable to the reviewer? Do they need to be or can they be improved?

Program 1:

Program 2:

Program 3:

Program 4:

What kind of and how often will feedback be given to the trainee during the practice? Is this schedule acceptable or can it be improved?

Program 1:

Program 2:

Program 3:

Program 4:

	Program:			
	1	2	3	4
Overall Rating:				

Figure 21--Repetition and Practice Worksheet

Reinforcement and Rewards

In addition to how the skills and knowledge gained in the training are practiced, attention may be given to how the trainee is motivated, reinforced, and rewarded. The following worksheet allows the reviewer to evaluate each program against a set of six motivational elements. The elements are divided up according to whether they are critical at the beginning, middle, or end of the training (Wlodkowski, 1985b).

In the beginning stage, trainees' attitudes and the trainees' needs and desires must be addressed in order for the participants to buy into the learning process. Providing an environment in which people feel safe and the risks of the training are minimized will assist in creating favorable attitudes. Justifying the training by building on the trainees' existing needs and desires will do much to ensure their interest and attention throughout the program.

In the middle stage of the program, reinforcement should focus on the steps provided to maintain the trainees' attention. They may be stimulated by using a variety of learning techniques and methods. At the same time, the trainees' emotional reaction to the training should be considered. Oftentimes, affective aspects of the training programs are not considered. It may be difficult to measure this aspect of the program because measuring it may depend more on the instructor than on the materials. Documentation to assess this aspect of the program would most likely be found in the comments accompanying the leader's guide. If such aspects were not considered in the program's material, that program would likely

receive a lower rating. Another measure of the affective learning factor may be taken from the evaluation ratings of trainee's reactions to the program.

During the end stage of the program, reinforcement and rewards should be directed toward encouraging and supporting competent learning. As with the repetition and practice worksheet, this aspect focuses on how the successful behavior and learning are given positive reinforcement. How is unsuccessful behavior addressed?

Based on a review of these six elements of a program's motivational strategy, an overall rating of each program can be given. A program that includes a clearly defined motivational strategy during the beginning, middle, and end stages is more likely to be effective than a program in which the strategy is left to chance.

REINFORCEMENT & REWARDS WORKSHEET

Program _____ Prepared by _____
Date _____ Page _____ of _____

Rate each program according to how well each motivation factor is incorporated into the instructional design.

		Program			
		1	2	3	4
BEGINNING	1. Attitudes are dealt with by minimizing the risk of the training and providing a safe environment for trainees to learn. 2. The training is designed to fit what people want to do. It builds on trainees' needs and desires.				
MIDDLE	3. The program is designed to make the process of learning stimulating and exciting and to maintain attention. 4. The emotional aspects of the learning are considered by balancing discovery and analytical experiences.				
ENDING	5. The objectives are clearly stated and communicated so that the trainees will experience competent performance of the skills or learning covered in the program. 6. Desired behaviors in the training are positively reinforced by the instructor.				

Rating System: 4 = Highest to 1 = Lowest	Program:			
	1	2	3	4
Overall Rating:				

Figure 22--Reinforcement and Rewards Worksheet

Adult Learning Principles

Based on the summary of adult learning principles provided in the literature review, the following worksheet allows the reviewer to consider each program on the basis of each of the identified principles. The first question considers the climate established in the program. A climate of respect exists when the trainees are treated appropriately. Appropriate treatment does not include behaviors that belittle others or involve emotional or physical abuse in any way (Brookfield, 1986). The second question addresses the use of a collaborative mode of learning, which exists when the trainees and facilitators are "engaged in a cooperative enterprise in which, at different times, leadership and facilitation roles will be assumed by different group members" (Brookfield, 1986, pp. 9-10). Question three is concerned with developing a sense of empowerment and self-directedness in the trainee. Trainees are encouraged to take responsibility for their own learning, ensuring that the training meets their needs. Rather than seeing themselves as reacting to the "uncontrollable forces of circumstances," they should see themselves as "proactive, initiating individuals engaged in a continuous re-creation of their personal relationships, work worlds, and social circumstances" (Brookfield, 1986, pp. 9-11). Question four is concerned with how well the learning is integrated with the trainees' past experiences. Training that builds on trainees' previous experiences is more likely to be accepted and found meaningful than passively acquired learning. Question five considers the degree to which the trainees participate in the

program. Participation can be increased by encouraging trainees in developing "their own learning objectives, planning their own learning programs and evaluating their progress" (Mezirow, 1981, pp. 21-22). Question six addresses the program's emphasis on critically reflective thinking and the "relevant social and cultural norms (contextual factors)" (Yeres, 1986, p. 16) that may affect the learning. Brookfield (1986) defined this principle as follows: "Through educational encounters, learners come to appreciate that values, beliefs, behaviors, and ideologies are culturally transmitted and that they are provisional and relative" (pp. 9-10). Question seven is concerned with the training being action oriented. To what degree does the training focus on action outcomes, such as better decision making, on making behavioral changes, or on increasing trainees' abilities to learn? Finally, question eight is concerned with how true to life are the problem-posing and problem-solving aspects of the program. By making the problems as real as possible, the likelihood of on-the-job application of the learning is increased. After each program has been considered for each of the questions, the results are combined into an overall rating.

ADULT LEARNING PRINCIPLES WORKSHEET

Program _____ Prepared by _____
Date _____ Page _____ of _____

Rate each program on how well each principle of adult learning is used in the program.

	Program			
	1	2	3	4
1. A climate of respect is maintained.				
2. A collaborative mode of learning is used.				
3. Self-directedness and the empowerment of the learner is fostered.				
4. The trainees' past experiences are used as a departure for the learning experiences.				
5. Participation is used as much as possible.				
6. There is an emphasis on reflective thinking and an awareness of contextual factors.				
7. A concern for learning with action (including decision making, behavioral change, ability to learn, and collective action).				
8. Real problems are used as the basis of problem posing and problem solving.				
TOTALS				

Rating System:
4 = Excellent to 1 = Poor

	Program:			
	1	2	3	4
Overall Rating:				

Figure 23--Adult Learning Principles Worksheet

Media Use

An evaluation of the media used in the program may be performed using the following worksheet. The simplest way to use this sheet is to list each type of media used in the program. If other considerations are important, such as cost, in-house media capability, technology, flexibility, and so forth, it may be necessary to weight appropriately the various media choices. This could be done by assigning a weight factor on the line next to each type of media, according to the specific situational requirements. Then the rating factor could be multiplied by the rating within each box and the weighted totals could be together at the bottom. If the in-house capability to utilize the media provided in the program is not available, (i.e., the company has no videodisk player), the program could be eliminated from consideration, or at least a cost estimate could be made for rectifying the situation.

MEDIA USE WORKSHEET

Program _____ Prepared by _____
Date _____ Page _____ of _____

Type of Media	Program 1	Program 2	Program 3	Program 4
Overhead Transparencies				
Opaque and Rear-Screen Projectors				
Chalkboards and Other Boards				
Flipcharts				
Slides				
Filmstrips				
Motion-Picture Films				
Videotapes				
Interactive Videodisks				
Audiotapes				
Printed Materials				
Models, Simulators, and Real Equipment				
Computer Software				
Totals:				
Rating:				

Rating System: 4 = Highest to 1 = Lowest

Figure 24--Media Use Worksheet

Evaluation of the Criteria in the Context Dimension

The context dimension considers organizational factors associated with the buying/decision-making process. What factors in the buyer's organization, what factors in the vendor's organization, and what factors in the relationship between the two organizations will affect the training program's overall effectiveness? For example, in an attempt to improve customer service quickly, it is not uncommon for a company to offer customer service training for their front line employees. Yet, an analysis of the situation may show that the people on the front line already possess these skills, and it is the "system" that does not allow them to use the skills. The problem may stem from the support they receive from the company, the quality of the products, or the management style of the company. For example, an airline decided to improve customer service by initiating a companywide service training effort for front line employees. The airline's plan did not address the more serious questions, for example, flights that did not arrive on time and baggage that was lost. This company needed a clear assessment of the organizational factors associated with the training.

In addition to the organizational factors, the context dimension considers the implementation factors that are critical to a program's success. Even the best program will fail to achieve the full potential of its effectiveness if it is poorly implemented. Especially in human services and social programs, implementation is a major factor in program effectiveness. "Evaluations that have

ignored implementation issues may have asked the wrong questions" (Patton, 1986, p. 148). Factors from the literature review that will be considered in this dimension include: price, vendor's ability to deliver, cultural fit, instructor training, vendor's capability, and the vendor's ability to customize the program.

Price Comparison

The price comparison worksheet is a tool for comparing the costs of programs. However, many factors can affect pricing, and the price of a program for a particular organization may be radically different from the price of the same program for a public seminar. If known, the more accurate price (the actual cost for the company) should be used. If the programs differ in length, based on differing amounts of instruction, the price could be pro-rated in order to find a standard figure, such as the price for eight hours of instruction; the comparison can then be based on equal measures. The critical issue is the total price required to achieve the program's objectives, and it is important to determine what is included and excluded in the price. If in-house staff are trained by the vendor to deliver the program, there may be associated costs for the length and quality of instructor training, leader's guides, and administration kits for each instructor. For programs that continue over a period of time, the costs of the participant's materials may be the critical factor in pricing. Often, a program will be customized, so the cost of customization represents the major portion of the start-up costs, and the cost of materials will be minimal. Each situation will have its own unique aspects. After considering the price in relation to

the quality of each item for a specific situation, a rating is assigned to each variable. An overall rating is then assigned.

A word of caution is noted regarding the significance of the pricing worksheet: After one organization evaluated the design and content of a specific program, the vendor instantly dropped the price. In addition, the vendor, interested in the report, was willing to pay for a copy of the evaluation. The knowledge gained by performing the type of evaluation suggested in this study may put the decision maker in a more powerful position to negotiate price with the vendor.

PRICE ANALYSIS WORKSHEET

Program _____ Prepared by _____
Date _____ Page _____ of _____

	Program 1	Program 2	Program 3	Program 4
Seminar (Inst. + Mat'ls)	$	$	$	$
Pro-rated for 8 Hrs.	$	$	$	$
Instructor Training	$	$	$	$
Administration Kit	$	$	$	$
Materials Only	$	$	$	$
Other (I.e., Customizing)	$	$	$	$
OVERALL RATING				

Rating System: 4 = Highest to 1 = Lowest

Figure 25--Price Analysis Worksheet

Ability to Deliver

The time in which a program can be most effectively implemented may be an important factor in the decision-making process. Once a training need is identified, the internal costs of delivering a product or service may be viewed as excessive. Thus, excess costs that are accrued during the time that the need is not met should be considered, along with the costs associated with the actual purchase and implementation of the program. The time to implement may depend on each vendor's purchasing procedures and capabilities. If the program is customized, the time required for that process should be considered.

If the training is provided by a vendor, when are their instructors available? If the internal staff will be trained, when and where will the training take place? When is management willing to release the employees for this training? After considering the relevant factors, a rating is assigned each program.

ABILITY TO DELIVER WORKSHEET

Timeframe desired: _____ **Latest acceptable date:** _____

Program _____ **Prepared by** _____
Date _____ **Page** _____ **of** _____

	Program 1	Program 2	Program 3	Program 4
Seminar (Inst. + Mat'ls)				
Instructor Training				
Materials Only				
Customizing Materials				
Producing Video				
Other				

Rating System:
4 = Highest to 1 = Lowest

	Program:			
	1	2	3	4
Overall Rating:				

Figure 26--Ability to Deliver Worksheet

Cultural Risk Assessment

Programs that are most important to an organization and have the highest risk of failure are often those that are least compatible with the existing culture. The decision maker should reconsider purchasing such a program and make an effort to adapt the program more closely to the existing culture. If decision makers understand their cultures, the following worksheet could help them to rate how the programs under consideration would fit their organization.

The format of this worksheet is a matrix that considers the risk associated with two factors: compatibility of the program with the culture and the importance of the training. A program that is low in compatibility with the culture and high in terms of importance to corporate strategy would represent an unacceptable risk, and the program should either be removed from consideration or redesigned to be more compatible with the existing culture. Programs that are somewhat compatible with the culture and are of medium importance are manageable risks. In general, programs rated as a manageable risk offer the highest potential for being effective: It is more likely that the results of such programs will be used and accepted in a way that shifts the organization's behavior in the desired direction. Programs that represent a high compatibility with culture and are of low importance to the organization are rated with a negligible risk. In such cases, the reviewer may suggest programs that are more important to the organization.

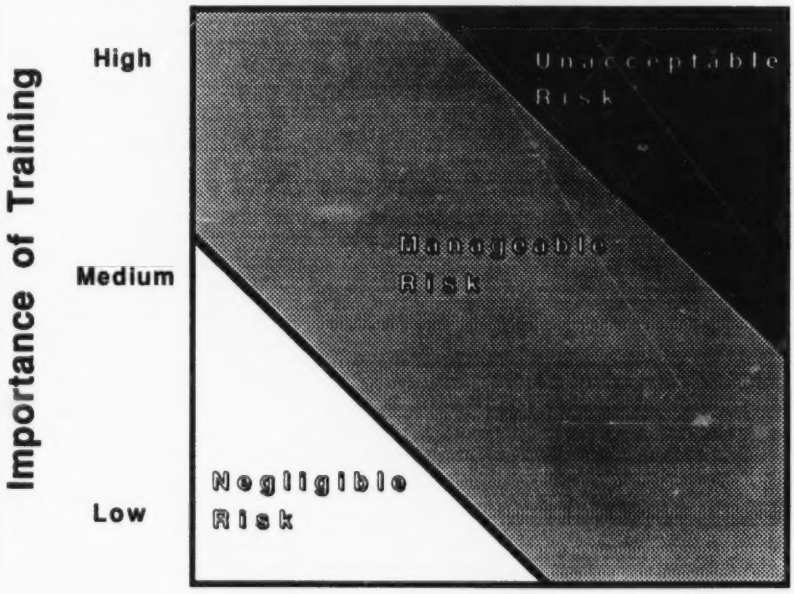
The matrix also shows that programs of high importance should be designed to be highly compatible with the existing culture in order to decrease the risk that the training effort will fail or be ineffective. The decision maker should seriously reconsider programs that are both low in importance and not compatible with the existing culture: Even if the risk is manageable, there may be more fertile areas for training resources.

The boundaries between negligible, manageable, and unacceptable risk depend on many factors within both the organization and the programs under consideration. In addition, risk may be high for the training department, but low for the organization, or vice versa. It is important that the decision maker consider a risk factor in relationship to the program selected: What are the risks, and whom do they affect? If properly identified, aspects of the training program or the implementation of the program may be reconsidered to decrease the risk (Davis, 1984).

CULTURAL RISK ASSESSMENT WORKSHEET

Program _____ Prepared by _____

Date _____ Page _____ of _____



Plot each of the programs under consideration on the above matrix. Steps that could be taken to decrease risk include:

1.

2.

3.

Rating System: 4 = Highest to 1 = Lowest	Program: 1	2	3	4
Overall Rating:				

Figure 27--Cultural Risk Assessment Worksheet

Instructor Training

It may be important for the supplier to teach in-house people to provide the training. The following worksheet contains questions to help the reviewer determine the role of the instructor and aspects of the instructor training, if the vendor provides it. How will feedback be given? What are the prerequisites? What are the qualifications of the person who will conduct the instructor training? How much time will be spent on the training? When and where will it be held? Each question should be considered from two perspectives: Quality and cost. For example, it may be much more cost effective to have the instructor training provided in-house than to pay for instructors' expenses at an alternate location.

INSTRUCTOR TRAINING WORKSHEET

Project _____ Prepared by _____
Date _____ Page ___ 1 ___ of ___ 2 ___

What is the instructor's role?

	Program			
	1	2	3	4
Consultant				
Content Expert				
Lecturer				
Evaluator				
Facilitator				
Coach				
Entertainer				
Other				

If the vendor provides instructor training, the following questions may be considered:

How will feedback be given to the instructors during the training? Is this acceptable? Can it be improved?

	How is feedback given?	How can it be improved?
Program 1:		
Program 2:		
Program 3:		
Program 4:		

Figure 28--Instructor Training Worksheet (Page 1)

INSTRUCTOR TRAINING WORKSHEET (continued)

Project _____ Prepared by _____
Date _____ Page __2__ of __2__

What are the prerequisites for instructors?

Program 1:

Program 2:

Program 3:

Program 4:

What are the qualifications of the trainers of the new instructors?

Program 1:

Program 2:

Program 3:

Program 4:

	When will the training be held?	How long will the training last?	Where will the training be held?
Program 1:			
Program 2:			
Program 3:			
Program 4:			

Rating System: 4 = Highest to 1 = Lowest	Program:			
	1	2	3	4
Overall Rating:				

Figure 29--Instructor Training Worksheet (Page 2)

Vendor's Capability

An evaluation of each supplier's resources, personnel, and technological capabilities can be performed using the following worksheet. Notes can be made about why specific ratings were given. For example, the supplier for Program 1 may lack the ability to provide interactive video, which results in a lower rating. If it were critical that the supplier have this capability, Supplier #1 would be eliminated from further consideration. The information is then summarized into an overall organizational capability rating for each supplier.

VENDOR CAPABILITY WORKSHEET

Program _____ Prepared by _____
Date _____ Page _____ of _____

Rate each program in terms of the supplier's resources:

Program 1:

Program 2:

Program 3:

Program 4:

Rate each program in terms of the supplier's personnel:

Program 1:

Program 2:

Program 3:

Program 4:

Rate each program in terms of the supplier's technology to do the job?

Program 1:

Program 2:

Program 3:

Program 4:

Rating System: 4 = Highest to 1 = Lowest	Program:			
	1	2	3	4
Overall Rating:				

Figure 30--Vendor Capability Worksheet

Customizing Capability

The following worksheet is designed to assess an overall customizing capability rating for each program. If a program must be customized to meet the identified training needs, an assessment of all the programs under consideration should be made. The customization rating scale (1 to 6 at the top of the worksheet) refers to various levels of change. Although vendors may state that their programs are easily customized, the buyer should determine the true degree of work and expertise required to customize a program. Each number of the customization rating scale represents an increased degree of effort in the custom designing process. A major change in the length of the program would require more effort than simply adding in cases specific to the purchasing organization.

To use this worksheet, first list the numbers associated with the custom work required. For example, if a program needs to be shortened, specific cases changed, and the company name changed, but no additional video needs to be shot and no new content created, the rating would be 1, 2, 5. The cost column is based on the vendor's estimate to perform the customization The costs may be stated in terms of performing the custom work in-house, having the vendor perform the work, or as a ratio by putting a slash in the box and listing the estimated vendor cost at top and estimated in-house cost below. In certain situations, <u>when</u> the work can be delivered may be more important or as important as the actual dollar costs. The column headed Delivery Date is used to consider this aspect. Based on these aspects of the decision, an overall rating is then assigned to each program for the customizing capability rating.

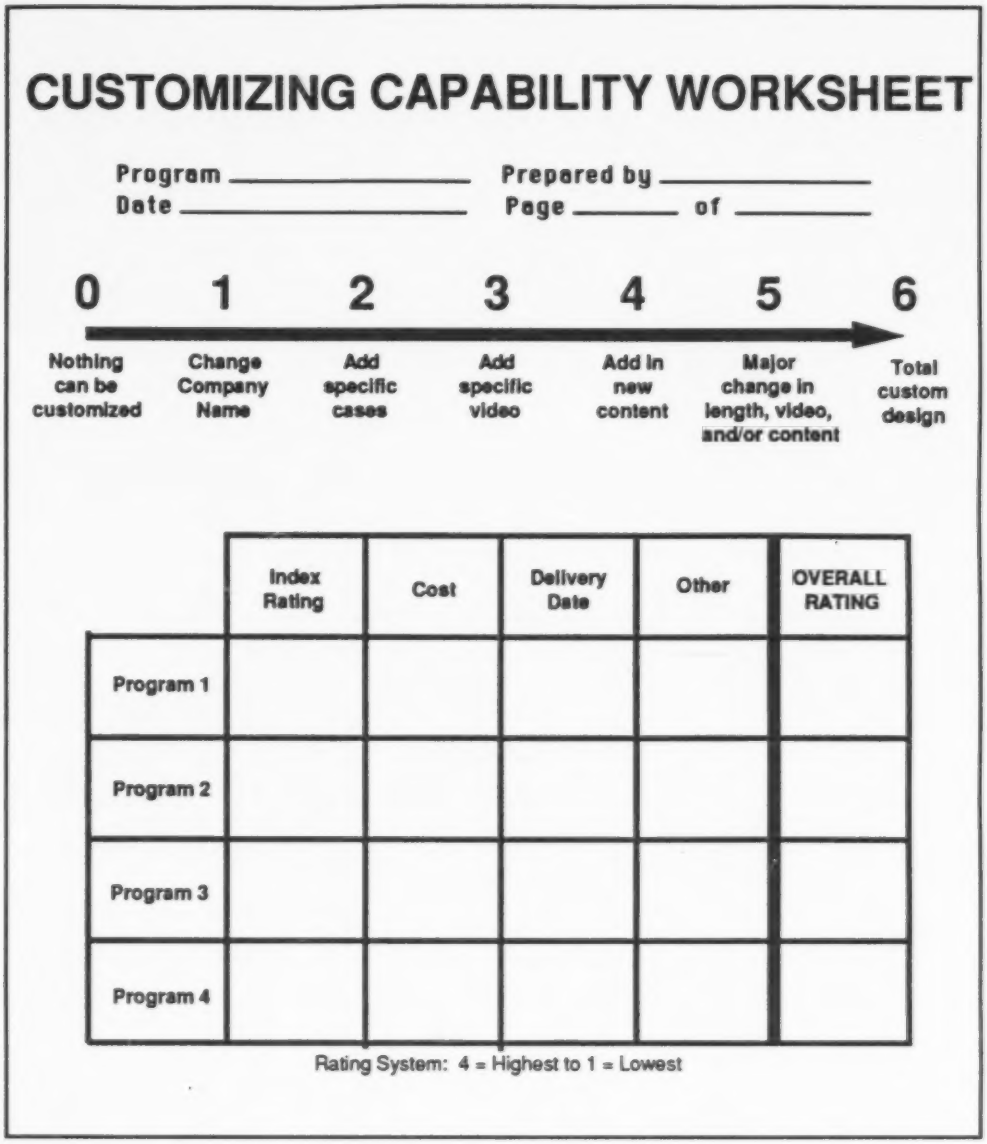


Figure 31--Customizing Capability Rating Worksheet

Evaluation of the Criteria in the Control Dimension

The control dimension concerns the evaluation and research that have been conducted during a program's development. In addition, aspects of evaluation and design that pertain directly to the program's effectiveness are considered. According to the literature search, the factors indicated within this dimension include needs assessment/research, effectiveness evaluation/research, checking references of previous users, transfer of learning, and testing and measurement methods used in the program.

Needs Assessment/Research

Before a program is developed and designed, certain assumptions are made about the needs that the program will address. The supplier of a program should have conducted a needs assessment as part of the development process. Reviewing the documentation for the needs assessment can provide some insight into the rationale for the program and how closely the needs assessment from which the program was initially designed compares with the buyer's needs assessment. In the following worksheet the reviewer evaluates the needs assessment regarding the clarity of intent, statement of purpose, sample size and characteristics, methodology, interpretation of the data, and results and conclusions.

NEEDS ASSESSMENT REVIEW WORKSHEET

Program _____ Prepared by _____
Date _____ Page _____ of _____

I. INTRODUCTION:
Does the introduction to the needs assessment:
a. Review the relevant literature?
b. State the preliminary questions?
c. Justify the problem as important and worthwhile?
d. Relate the problem to theory?
e. Use inclusive language?

II. SAMPLE:
a. Is the assessment sample large enough?
b. How was the sample population for the assessment chosen?
c. How does the sample population compare with the intended audience within the purchasing organization?
d. Is there evidence of sample biases?

III. DATA COLLECTION METHODS:
a. What methods are used to collect data?
b. Is there evidence that the methods are valid and reliable?
c. Are there specific weaknesses inherent in the methods?
d. If there are weaknesses, have they been addressed?

Figure 32--Needs Assessment Review Worksheet (Page 1)

NEEDS ASSESSMENT REVIEW WORKSHEET (continued)

Program _____ Prepared by _____
Date _____ Page _____ of _____

IV. PROCEDURES FOR INTERPRETING DATA:

a. What procedures were used to interpret the data?
b. Is there evidence that the procedures are valid and reliable?
c. Are there weaknesses in the interpretation that may bias the results?

V. RESULTS AND CONCLUSIONS:

a. Are the results stated clearly and in understandable terms?
b. Does the investigator exaggerate, conclude too much, or otherwise add bias to the needs assessment findings?

VI: OVERVIEW:

a. What are the main strengths of the needs assessment?
b. What are the most serious deficiencies?
c. How do the deficiencies, if any, affect the application of the needs assessment to the purchaser's situation?

Figure 33--Needs Assessment Review Worksheet (Page 2)

NEEDS ASSESSMENT SUMMARY WORKSHEET

Project _____ Prepared by _____
Date _____ Page _____ of _____

Summary comments and notes:

Program 1:	Program 2:
Program 3:	Program 4:

	Program:			
	1	2	3	4
Overall Rating:				

Figure 34--Needs Assessment Review Summary Worksheet

Evaluation/Research

In addition to a needs assessment, an existing program may have been previously evaluated for the results produced by the training. Indeed, one advantage of using a vendor-supplied training program is that it has been used in other organizations and that improvements probably have been made based on how the program worked in these previous situations. If such a previous evaluation research was done, the decision maker should ask to see the results. If the vendor is not able to provide such supporting evidence, the reviewer should consider carefully any claims made about the results of the program. If a previous evaluation was made and the vendor is willing to share the results with the customer, the following worksheet provides a means for reviewing it. A series of questions assesses the introduction, the sample populations, the measures, the treatments, and the results and conclusions. On the final page, comments and an overall rating for each program are made.

EVALUATION RESEARCH REVIEW WORKSHEET

Program _____ Prepared by _____
Date _____ Page _____ of _____

I. INTRODUCTION:
Does the introduction to the research report:
a. Review the relevant literature?
b. State the problem clearly?
c. Justify the research as important and worthwhile?
d. Relate the problem to theory?
e. Control for bias in the study by using unbiased language?

II. SAMPLE:
a. Is the sample large enough?
b. How was the sample population chosen?
c. How does the sample population compare with the intended audience within the purchasing organization?
d. Is there evidence of sample biases?

III. MEASURES:
a. Is there evidence that the measures are valid and reliable?
b. Are there any specific weaknesses in the measures?

Figure 35--Evaluation Research Review Worksheet (Page 1)

EVALUATION RESEARCH REVIEW WORKSHEET (continued)

Program _____ Prepared by _____
Date _____ Page _____ of _____

IV. TREATMENTS:

a. What type of research design was used?
b. Are the treatments described in sufficient detail?
c. Are there weaknesses in the evaluation design that may bias the results?

V. RESULTS AND CONCLUSIONS:

a. Were appropriate statistical tools used?
b. Are the results stated clearly and in understandable terms?
c. Does the investigator exaggerate or conclude too much from the findings?

VI: OVERVIEW:

a. What are the main strengths of the research?
b. What are the most serious deficiencies?
c. How do the deficiencies, if any, affect the application of the research to the purchaser's situation?

Figure 36--Evaluation Research Review Worksheet (Page 2)

EVALUATION RESEARCH REVIEW SUMMARY WORKSHEET

Project _____ Prepared by _____
Date _____ Page ___3___ of ___3___

Summary comments and notes:

Program 1:	Program 2:
Program 3:	Program 4:

	Program:			
	1	2	3	4
Overall Rating:				

Figure 37--Evaluation Research Review Summary Worksheet

References

One of the advantages of buying a program from a supplier is that the program has been used by other organizations. The next worksheet provides a list of possible questions for other users of a program. After contacting a reference, the decision maker should make clear who he/she is, why he/she is calling, and how the information will be used. The purpose of the reference checking worksheet is to assist the reviewer in asking detailed questions. It is better to ask directly, "What was management's reaction to the workshop?" than to ask, "How did you like it?" After checking with other references, the reviewer summarizes the information into an overall rating.

REFERENCE CHECKING WORKSHEET: Contact Listing

Program _____ Prepared by _____
Date _____ Page _____ of _____

Contact #1: NAME POSITION COMPANY ADDRESS TELEPHONE DATE CONTACTED NOTES	Contact #2: NAME POSITION COMPANY ADDRESS TELEPHONE DATE CONTACTED NOTES
Contact #3: NAME POSITION COMPANY ADDRESS TELEPHONE DATE CONTACTED NOTES	Contact #4: NAME POSITION COMPANY ADDRESS TELEPHONE DATE CONTACTED NOTES

Figure 38--Reference Checking Worksheet: Contact Listing

REFERENCE CHECKING WORKSHEET: Interview Guide

Reference _____ Prepared by _____
Date _____ Page _____ of _____

1. What were the participants' reactions to the training?

2. What was management's reaction to the training?

3. Did the training result in any change in work behavior?

4. How did the program meet your expectations based on the vendor's assurances?

5. What benefits do you feel your organization gained by using this particular program and/or vendor?

6. What was this program's biggest strength? Biggest weakness?

7. Would you use this vendor again for other training programs?

___ Strong Yes ___ Yes ___ Maybe ___ No ___ Strong No

8. Based on your investment of time and money, how would you rate this program overall?

___ Superb ___ Very Good ___ Good ___ Fair ___ Poor

9. Is there anything else I should know about this program and vendor? (Additional comments can be written on the back.)

Figure 39--Reference Checking Worksheet: Interview Guide

REFERENCE CHECKING WORKSHEET: Summary

Reference _____ Prepared by _____
Date _____ Page _____ of _____

	Program:			
	1	2	3	4
Overall Rating:				

Comments:

Program 1:

Program 2:

Program 3:

Program 4:

Figure 40--Reference Checking Worksheet: Summary

Transfer of Learning

The critical concern of a training program is whether the training is actually applied and used on the job. This next criterion indicates how well the program facilitates transfer of learning to the job. Of the several models of assessing transfer of learning that were presented in the literature review, two methods are considered in this section: using field analysis and using factors that affect performance.

If Lewin's field analysis model is used when the reviewer considers the transfer of learning from a training program, the issues on the following worksheet are raised (Sredl & Rothwell, 1987). The steps described below would be helpful for the reviewer:

1. Answer each of the four questions concerning internal, induced, restraining, and driving forces.
2. Rate each program according to the four-point scale (4 = excellent and 0 = doesn't address the issue) based on how well the program addresses that particular force.
3. Provide an overall rating of the programs from best to worst (4 to 1).

TRANSFER OF LEARNING:
Field Analysis Worksheet

Figure: Lewin's Model of Change

	RATINGS:			
	Program 1	Program 2	Program 3	Program 4
1. What forces are acting to favor on-the-job application of the learning acquired in this training? (DRIVING FACTORS)				
2. What factors are acting to maintain the status quo? (RESTRAINING FORCES)				
3. What are the individuals' needs and aspirations? (INTERNAL FORCES)				
4. What pressures are exerted on the individual by the work context? (INDUCED FORCES)				
Rating Scale: 4 = high to 1 = Low — TOTAL SCORES				
OVERALL RATING				

Figure 41--Transfer of Learning: Field Analysis Worksheet

A second method by which to assess transfer of learning issues is to consider each of the key factors in the organization that affect human performance. The following worksheet was developed based on Sredl and Rothwell's summary of these factors from the literature. Questions to assist the reviewer in considering the performance factors concerning external environment, organizational culture, organizational structure, organizational processes, dominant power coalitions, supervisors, reward systems, trainees' roles, work groups, friendship groups, training groups, and the individual are given. To work through the worksheet again requires listing the issues present under each factor, then assessing the program against each factor using the four-point rating scale. The programs are assigned an overall rating at the end of the process.

TRANSFER OF LEARNING ASSESSMENT WORKSHEET

Program _____ **Prepared by** _____

Date _____ **Page** ___1___ **of** ___3___

PROGRAM	1	2	3	4
1. EXTERNAL ENVIRONMENT What factors in the external environment support the transfer of learning?				
2. ORGANIZATIONAL CULTURE What factors in the organizational culture support the application of learning? How consistent is the program with the historical beliefs and values of the culture?				
3. ORGANIZATIONAL STRUCTURE How/to what extent do factors in the organizational structure influence the transfer of learning? Division of Labor Authority Departmentalization Span of Control				
4. ORGANIZATIONAL PROCESSES What chacteristics of the organizational processes support the transfer of learning? Decision-making methods Communication Practices Socialization				
Totals page 1				

NOTE: Rating System: 4 = Highest to 1 = Lowest

Figure 42--Transfer of Learning Assessment Worksheet (Page 1)

TRANSFER OF LEARNING ASSESSMENT WORKSHEET

Program _____ **Prepared by** _____

Date _____ **Page** ___2___ **of** ___3___

PROGRAM	1	2	3	4
5. DOMINANT COALITIONS Are the dominant members of various coalitions willing to support the training? To what extent will they take actions consistent with the training?				
6. SUPERVISORS Are the supervisors of the trainees willing to support the training?				
7. REWARD SYSTEM How will the trainees be rewarded for implementing the training? Can explicit rewards be created?				
8. ROLE Is the training consistent with the trainees' expectations and perceptions of their roles? Is the training consistent with other people's expectations and perceptions of the trainees' roles?				
Totals page 2				

NOTE: Rating System: 4 = Highest to 1 = Lowest

Figure 43--Transfer of Learning Assessment Worksheet (Page 2)

TRANSFER OF LEARNING ASSESSMENT WORKSHEET

Program _____ **Prepared by** _____

Date _____ **Page** ___3___ **of** ___3___

PROGRAM	1	2	3	4
9. WORK GROUP Is the training consistent with the work group's norms, values, structure, and expectations for the individual who will apply the training?				
10. FRIENDSHIP GROUP Is the training consistent with or at least not in conflict with values of the trainees' social groups?				
11. TRAINING GROUPS What will the effect of the training group be on the program? Could the training group be structured to increase the likelihood of members' interacting and reinforcing the application of the training after it is completed?				
12. INDIVIDUAL How well does the program take into account the individual's ability, motivation level, aspirations, and perceived job role?				
page 3				
page 2				
page 1				
TOTAL				
RATING				

Rating System: 4 = Highest to 1 = Lowest

Figure 44--Transfer of Learning Assessment Worksheet (Page 3)

Testing/Measurement (In the Program)

Another important area to consider in this control dimension is how testing and measurement of learning is provided. What feedback is given to participants about how well they have mastered the training? The next worksheet assists the reviewer in evaluating the testing and measurement of programs. How the testing will be performed is considered in the first question. A list of verbal or written test items is given. In some programs, the best method for testing performance may be a demonstration of the skills. A second set of items regarding such a test by demonstration of skills follows. This demonstration can be completed without ratings or feedback (unrated practice), with ratings and feedback given (instructor rated), with participants' ratings of each other (participant rated), or through some other method. The second question of this worksheet considers the specific feedback elements used with the testing. How is the feedback given to the trainee? Can the reviewer suggest a way to improve on the feedback methods used in the program? Question three considers the transfer of learning issue related to the testing and measurement. How well does the testing compare with the actual on-the-job application of the training? In question four, the reviewer determines if the program objectives are consistent with what is tested and measured. Based on a consideration of these questions, an overall rating is assigned to each program. (This discussion is based in part on Sredl & Rothwell, 1987.)

TEST & MEASUREMENT WORKSHEET

Project _____ Prepared by _____
Date _____ Page ___ 1 ___ of ___ 2 ___

1. What will the testing include?

	Program			
	1	2	3	4
Test items such as:				
True/False				
Multiple Choice				
Essay				
Fill in the Blank				
Matching				
Oral Response				
Projective				
Other				
Demonstration:				
Unrated Practice				
Instructor Rated				
Participant Rated				
Other:				
Other Test Approaches:				

2. How will feedback be given to the trainee during the testing or measurement? Is that acceptable or can it be improved?

	How is feedback given?	How can it be improved?
Program 1:		
Program 2:		
Program 3:		
Program 4:		

Figure 45--Test and Measurement Assessment Worksheet (Page 1)

TEST & MEASUREMENT WORKSHEET (continued)

Project _____ Prepared by _____
Date _____ Page ___ 2 ___ of ___ 2 ___

3. In what ways will the testing differ from the actual job application of the training? Are the differences acceptable to the reviewer or do they need to be/can they be improved?

Program 1:

Program 2:

Program 3:

Program 4:

4. How well does the testing or measurement match the stated program and unit objectives?

Program 1:

Program 2:

Program 3:

Program 4:

Rating System: 4 = Highest to 1 = Lowest	Program:			
	1	2	3	4
Overall Rating:				

Figure 46--Test and Measurement Assessment Worksheet (Page 2)

Summarizing the Ratings

After the reviewer rates the programs on each of the criteria identified as important to the decision-making process, the ratings are summarized on the summary worksheet. By multiplying the ratings by the weightings the reviewer arrives at a weighted number for each program on each selected criterion. These weighted numbers are totaled, thus giving an overall number for each program. The highest number will represent the best program, provided that the proper weightings were assigned to each criterion, the correct criteria were chosen, and an accurate evaluation was performed when the programs were rated against the criteria.

SUMMARY WORKSHEET

Project _____ Date _____

Prepared by _____ Page _____ of _____

CRITERION	Weight	Program 1 Rating/X wt. =		Program 2 Rating/X wt. =		Program 3 Rating/X wt. =		Program 4 Rating/X wt. =	
	Totals	# 1		# 2		# 3		# 4	

Figure 47--Summary Worksheet

CHAPTER FIVE -- FINDINGS, CONCLUSIONS, AND RECOMMENDATIONS

The purposes of this study were (a) to determine the criteria identified in the literature as important to the process of selecting training programs, (b) to create a model to account for the criteria, and (c) to develop an instrument for evaluating programs against the criteria. A review of the literature was carried out regarding decision-making processes, vendors' training programs, instructional development systems, training evaluation, instructional design and delivery, and organizational influences on training. From this review, criteria were identified and separated into four dimensions to create the training program selection criteria model and checklist. In addition, an instrument consisting of worksheets for each criterion was developed and presented to assist the training program buyer in evaluating and comparing programs and reaching an overall decision.

In reviewing the findings of this study, each dimension should be compared regarding the criteria found in the literature and the criteria that were expected. In doing so, the design and content dimensions appear to represent most thoroughly the possible criteria. Because the design dimension is based on firmly established instructional design systems and because much has been written about each aspect of the design process, it was expected that this list would be more thorough and complete than other aspects of the program selection model.

In the content dimension, focusing on the comparison of the content to the assessed needs, the accuracy of the content, and

applicability of the content to the trainees' characteristics and trainees' readiness provides a complete listing of aspects to be considered. To expand the content dimension, a worksheet might be developed to determine the costs of including unnecessary content or the costs of not including required content. The subject matter review worksheet might be redesigned for several different situations, for example, it might be used by a subject matter expert to review technical training, or it might be used by a nontechnical manager to review nontechnical programs. These worksheets could be designed to focus on the materials, the program, or the materials and the program.

The context and control dimensions do not represent as thorough a listing of possible criteria as the other two dimensions. The criteria contained in the control dimension should be expanded to contain a cost-benefit analysis criterion. The context dimension appears to be the least complete. A worksheet could be developed to assist the reviewer in selecting a vendor-supplied instructor.

The review of decision-making and buying processes showed the importance of the factors external to the program. The importance that politics plays in the purchasing process would hardly be disputed, but it was not mentioned in the literature. The criterion cultural fit may have included too many different aspects of the decision-making process to be used as a single item. One aspect of cultural fit that was not considered was how well the program fits into the existing curriculum of the buyer's organization.

Dividing and assigning the criteria into the four dimensions may be arbitrary. For example, trainee characteristics could have been considered as part of the design dimension, even though they are considered as part of the content dimension.

An alternative means of mapping the criteria may be a three-part model based on criteria directly related to the program, to the implementation of the program, and to the organizational considerations. More work with people who would actually use this model could be done to determine the best presentation of the criteria.

The focus of this paper was on the purchasing of a program within an organization. The assumptions of the study and the literature considered have led to the development of the various criteria. Any change or investigation providing more concrete insight into the assumptions would be helpful. The investigator assumed that there would be either one person or a team of a few people, probably in the human resources or training department of an organization, who would be responsible for finding and choosing a program. A survey to identify exactly who is involved in selecting the training program would be helpful. Determining what criteria and information are important to actual purchases of training may represent a more valid way to determine present practices. Questions could then be directed to the consideration of what criteria are more important to some decision makers than to others. Certain types of programs may require the consideration of different criteria, or the criteria may take on different importance ratings.

The decision-making process is largely directed by criteria that are important to the primary stakeholders in the decision outcome. In future research, perhaps more emphasis could be placed on identifying key stakeholders and determining criteria that are important to them. The question of the relevance and usefulness of the evaluation results to decision-makers represents another area of inquiry to be considered in greater depth for future research and studies. Indeed, the major issue with program evaluation may not be what to evaluate but how to ensure that the evaluation data are used by the decision makers. As concluded in one study, "the recent literature is unanimous in announcing the general failure of evaluation to affect decision-making in a significant way" (Wholey, Scanlon, Duffy, Fukumotu, & Vogt, 1970, as cited in Patton, 1986, p. 23).

This study brings together some of the initial perspectives of the literature concerning decisions to buy vendor-supplied training programs. Much work remains concerning the decision-making processes used in selecting vendor-supplied training programs.

Concluding Comments

The implications this investigation can have for the buyer/seller relationship are considerable. If the majority of training buyers used the tools described here, the following might result:

1. Training programs would be bought and sold because of their merit and not because of personalities and politics.

2. Vendors would have more difficulty providing undocumented results. Many vendors would either have to redesign and document their programs or go out of business.
3. Flaws in training programs would be much more evident to the buyer earlier in the purchase process. Many flaws would be identified even before the pilot testing of the program, thus saving money, time, and expenses. Indeed, the decision to pilot-test a program may come too late in the process to reverse any but the poorest of purchasing decisions because of outside pressures to follow through with the program.
4. There may be a drop in training expenditures. Increased knowledge on the part of the buyers would put them in a better position to negotiate.
5. The organization may perceive the training function in a different light. Because the evaluation process discussed here requires the training program purchaser to consider the program from many different vantage points within the organization, he or she may become more integrally associated with the strategic and tactical aspects of organizational planning.
6. Training decisions would be well documented for later evaluation and consideration. Decision makers would be able to see both the strengths and the weaknesses in the purchasing process, and, subsequently, to apply that

learning to other situations. The purchaser would develop sharpened critical capabilities (Rogers & Volpe, 1984).

7. The buying/selling relationship between training professionals and vendors would be redefined. How information is shared between the two parties, the increased level of trust required to make the relationship more effective, and the increased emphasis on longer term, continuous interaction are just three aspects of the buyer/seller relationship that would change.
8. Training professionals would be held more accountable for their decisions and for determining the impact that programs will have on the organization.

REFERENCES

Anderson, D. (1983, December). How to prepare for presentations. Training, pp. 101-104, 108.

Anderson, M. A., & Robinson, S. L. (1984, August). Selecting HR systems software: Evaluating requirements and options. Personnel Administrator, pp. 99-133.

Anderson, S. B., Ball, S., Murphy, R. T., & Associates (1975). Encyclopedia of educational evaluation. San Francisco: Jossey-Bass.

Ausubel, D. P. (1963). The psychology of meaningful verbal learning. New York: Grune & Stratton.

Birnbrauer, H. (1987, July). Evaluation techniques that work. Training and Development Journal, pp. 53-55.

Borg, W. R., & Gall, M. D. (1983). Educational research: An introduction (4th ed.). White Plains, NY: Longman.

Brandenburg, D. C. (1986, September). A true-false test for training evaluators. Performance and Instruction Journal, p. 17.

Brandenburg, D. C. (1982, August). Training evaluation: What's the current status? Training and Development Journal, pp.14-19.

Briggs, L. V. (1967). Sequencing of instruction in relation to hierarchies of competency. Palo Alto, CA: American Institute for Research.

Briggs, L. J., Campeau, P. L., Gagne, R. M., & May, M. A. (1967). Instructional media: A procedure for the design of multi-media instruction, a critical review of research, and suggestions for future research. Palo Alto, CA: American Institute for Research.

Brinkerhoff, R. O. (1987). Achieving results from training. San Francisco: Jossey-Bass.

Brinkerhoff, R. O. (1988, February). An integrative model for HRD. Training and Development Journal, pp. 66-68.

Brinkerhoff, R. O., Brethower, D. M., Hluchyj, T., & Nowakowski, J. R. (1983). Program evaluation: Sourcebook, casebook--a practitioner's guide for trainers and educators. Boston: Kluwer-Nijhoff.

Brookfield, S. (1986). Understanding and facilitating adult learning. San Francisco: Jossey-Bass.

Burbank, L., & Pett, D. (1986, October). Designing printed instructional materials. Performance and Instruction Journal, pp. 5-9.

Busch, P. S., & Houston, M. J. (1985). Marketing: Strategic foundations. Homewood, IL: Irwin.

Cantwell, J. A., Hosterman, D. J., & Shelton, H. R. (1976). Using external programs and training packages. In: R. L. Craig (Ed.), Training and development handbook, 2nd ed. (pp. 47-1 to 47-16). New York: McGraw-Hill.

Clark, R. C., & Clark, R. E. (1984, July). Instructional media vs. instructional methods. Performance & Instruction Journal, pp. 1-3.

Clegg, W. H. (1987, February). Management training evaluation: An update. Training and Development Journal, pp. 65-71.

Cohen, M.D., March, J. C., & Olsen, J. P. (1972, March). A garbage can model of organizational choice. Administrative Science Quarterly, 17(1) pp 1-25.

Craig, R. L. (1976). Training and development handbook: A guide to human resource development. New York: McGraw-Hill.

Conrad, C. R. (1985). Strategic organizational communication. New York: Holt, Rinehart & Winston.

Cothran, T. (1987, May). Build or buy? Training, pp. 83-85.

Davies, I. K., (1981). Instructional materials. New York: McGraw Hill.

Davis, S. M. (1984). Managing corporate culture. Cambridge, MA: Ballinger.

Denova, C. (1979). Test construction for training evaluation. New York: Van Nostrand Reinhold.

Dick, W., & Casey, L. (1978). The systematic design of instruction. Glenview, IL: Scott Foresman.

Dick, W., & Casey, L. (1985). The systematic design of instruction, (2nd ed.). Glenview, IL: Scott Foresman.

DiPaolo, A. J., & Patterson, A. C. (1983, January). Selecting a training program for new trainers. Training and Development Journal, pp. 96-100.

Dube-Fortin, C. (1982, December). Training and software purchases; Making sure your organization makes a wise buying decision. NSPI Journal, pp. 36-37.

Fetteroll, E. (1987). The trainers resource 1987 [Introduction]. Amherst, MA: HRD Press.

Feuer, D. (1987, October). Workplace issues: Testing, training and policy. Training, pp. 66-72.

Ford, G. A. (1970, July). Four steps are no longer enough. Training and Development Journal, pp. 29-34.

Foshay, W. R. (1984, December). QA and QC: A training vendor's view of the formative/summative evaluation distinction. Performance and Instruction Journal, pp. 15-17.

Galagan, P. (1988, March). Challenging view of training from a top professional: An interview with John W. Humphrey. Training and Development Journal, pp. 44-48.

Gardner, J. E. (1987). Choosing effective development programs: An appraisal guide for human resources and training managers. New York: Quorum Books.

Garen, M. E., & Daniel, J. (1983, November). Constructing a training quality control system: A three-part approach to participative training design. Personnel Administrator, pp. 33-38, 79.

Geber, B. (1987, October). Training budgets still healthy. Training, pp. 39-45.

Goad, T. (1984, June). Building presentations: A top-down approach. Training, 21(6), pp. 50-55.

Goldstein, I. L. (1986). Training in organizations: Needs assessment, development, and evaluation. (2nd ed.). Monterey, CA: Brooks/Cole.

Grabinger, R. S. (1985, October). Evaluation criteria and checklist for CAI authoring tools. Performance and Instruction Journal, pp. 14-15.

Guion, R. M. (1977). Content validity--the source of my discontent. Applied Psychological Measurement, 1, pp. 1-10.

Hamblin, A. (1974). Evaluation and control of training. London: McGraw Hill.

Harless, J. H. (1975). An ounce of analysis (is worth a pound of objectives). Newnan, GA: Harless Performance Guild.

Hartley, J. (1985). Designing instructional text. New York: Nichols.

Heinich, R., Molenda, M., & Russell, J. D. (1985). Instructional media and the new technologies of instruction (2nd ed.). New York: Wiley.

Honeycutt, E. D., Jr., Harris, C. E., Jr., & Castleberry, S. B. (1987, May). Sales training: A status report. Training and Development Journal, pp. 42-46.

How to work with a training consultant. (1987, April). Sales and Marketing Training, pp. 8-12.

Hupp, D. E. (1988, January). Estimating video costs. Training, pp. 43-45.

Ilgen-Lieth, M., & Hazen, M. (1987, May). A procedure for formative evaluation of instructional software by instructional design consultants: Part 1 -- Overview. Performance and Instruction Journal, 26, pp. 16-19.

Jackson, R. W., & Pride, W. M. (1986, August). The use of approved vendor lists. Industrial Marketing Management 15(3), pp. 165-169.

Jamison, D., Suppes, P., & Welles, S. (1974). The effectiveness of alternative instructional media: A survey. Review of Educational Research, 44, pp. 1-68.

Janis, I. L. (1971, November). Groupthink. Psychology Today, 5, pp. 43-44, 46, 74-76.

Johnston, B. A. (1985, March). Readability in written instruction. Performance and Instruction Journal, pp. 18-19.

Joint Committee on Standards for Educational Evaluation (1981). Standards for evaluations of educational programs, projects, and materials, New York: McGraw Hill.

Kaufman, R., & Thiagarajan, S. (1987). Identifying and specifying requirements for instruction. In R. M. Gagne (Ed.), Instruction technology: Foundations. (pp. 113-140). London: Lawrence Erlbaum Associates,.

Kerr, M., & Burzynski, B. (1988, July). Missing the target: Sales training in America. Training and Development Journal, 42(7), pp. 68-70.

Killian, R. A. (1976) Human resource management: An ROI approach. New York: AMACOM.

Kirkpatrick, D. (1975). Evaluating training programs. Madison, WI: American Society for Training and Development.

Kirkpatrick, D. (1976). Evaluation of training. In R. Craig (Ed.) Training and Development Handbook, 2nd ed., R. Craig, ed. New York: McGraw-Hill.

Kirkpatrick, D. (1983, November). Four steps to measuring training effectiveness. Personnel Administrator, 28(11), pp. 19-26.

Kirkpatrick, D. L. (1984, November-December). Effective supervisory training and development, part 1: Responsibility, needs, and objectives. Personnel, pp. 25-30.

Kirkpatrick, D. L. (1985a, January). Effective supervisory training and development, part 2: In-house approaches and techniques. Personnel, pp. 52-56.

Kirkpatrick, D. L. (1985b, February). Effective supervisory training and development, part 3: Outside programs. Personnel, pp. 39-42.

Knowles, M. (1980). The modern practice of adult education. Chicago: Follett.

Laird, D. (1985). Approaches to training and development (2nd ed.). Reading, MA: Addison-Wesley.

Lashbrook, V. J. (1981a, November). New training programs: To buy or to build. Training, pp. 52-55.

Lashbrook, V. J. (1981b, March). Results from a survey of attitudes toward training. Unpublished manuscript.

Lawson, P. (1986, October). Effective instructional materials are more than content. Performance and Instruction Journal, pp. 3-4.

Lee, C. (1987a, October). Training magazine's industry report 1987. Training, pp. 33-35.

Lee, C. (l987b, October). Where the training dollars go. Training, pp. 51-65

Lee, C., & Zemke, R. (l987, June). How long does it take? Training, pp. 75-80.

McAllaster, C. M. (1987). Assessing vendor produced off-the-shelf programs in a specific company environment. Dissertation Abstracts International AAD87-21142 (University Microfilm No. 0965357).

McDevitt, T. (1983, June). A consumer's dilemma: Evaluating vendor training. Training and Development Journal, 37(6), pp. 82-85.

McLagan, P. (1983). Models for excellence: The conclusions and recommendations of the ASTD training and development competency study. Alexandria, VA: American Society For Training and Development.

Mager, R. F. (1962). Preparing instructional objectives. Gelmont, CA: Fearon.

Martin, B. L., & Driscoll, M. P. (l984, August). Instructional theories: Maximizing their strengths for application. Performance and Instruction Journal, pp. 1-4.

Martinetz, C. F. (l986, June/July). A checklist for course evaluation. Performance and Instruction Journal, pp. 12-19.

Masterson, P. M. (l984, May). How to assess staff training workshops: An appropriate technology approach. Performance and Instruction Journal, pp. 10-14.

Mayer, R. E. (1979, February). Can advance organizers influence meaningful learning? Review of Educational Research, 49(2), pp. 371-383.

Meister, G. (1986, October). A case study of continuing education program development in a business setting. Lifelong Learning: An Omnibus of Practice and Research, 2(10).

Meyer, A. D. (1977). Hospital environment, strategy, and structure: The role of managerial perception and choice. Dissertation Abstracts International, University of CA: Berkeley.

Mezirow, J. (1981, January). A critical theory of adult learning and education. Adult Education, 32(1), pp. 21-22.

Morrison, G. R. (1986, July). Evaluating training programs in business and industry. Performance and Instruction Journal, pp. 32-35.

Nadler, L. (1981, June). Implications of the HRD concept. Training and Development Journal, 35(6).

Nadler, L., & Nadler, Z. (1987). The trainers resource 1987 [Introduction]. Amherst, MA: HRD Press.

Nadler, L., & Nadler, Z. (1988). The trainers resource 1988 [Introduction]. Amherst, MA: HRD Press.

Patton, M. Q. (1986). Utilization focused evaluation. Beverly Hills, CA: Sage Publications.

Pfeiffer, & Jones (1973-79). Handbooks of structured experiences for human relations training, Vols. I-VII. San Diego, CA: University Associates.

Philips, J. J. (1983). Evaluating outside resources. In Handbook of training evaluation and measurement methods (pp. 206-228). Houston: Gulf.

Powers, E. (1983, March). Step-by-step to the design of sales training evaluation. NSPI Journal, pp. 23-25.

Reigeluth, C. M., & Curtis, R. V. (1987). Learning situations and instructional models. In R. M. Gagne (Ed.), Instruction technology: Foundations (pp. 175-206). London: Erlbaum.

Rogers, M. A., & Volpe, S. (1984, December). Evaluation of vendor courses. Performance and Instruction Journal, pp.18-22.

Rothwell, W. J. (1983, November). Curriculum design in training: An overview (A guide to understanding the leading theories of learning). Personnel Administrator, pp. 53-57.

Rutkaus, M. (1985, March). How to buy a training program. Performance and Instruction Journal, p. 26.

Schein, E. H. (1984, Winter). Coming to a new awareness of organizational culture. Sloan Management Review, pp. 3-16.

Schein, E. H. (1985). Organizational culture and leadership. San Francisco: Jossey Bass.

Schoonmaker, W. E. (1985, May). An analysis of the roles and use of training consultants. Performance and Instruction Journal, pp.11-13.

Scriven, M. (1967). The methodology of evaluation. In Perspectives of Curriculum Evaluation, American Education Research Association Monograph, No. 1, Chicago: Rand McNally.

Siliauskas-Walker, G. (1987, December). Banking on the customer. Training, pp. 77-80.

Shoemacker, H. L. (1969). Functional context method of instruction. Alexandria, VA: HUMRRO George Washington University.

Smith, B. B. (1983a, April). Model and rational for designing and managing instruction programs. Performance and Instruction Journal, pp. 20-22.

Smith, B. B. (1983b, May). Designing and managing instruction: A rationale with implications for practice and research. Performance and Instruction Journal, pp. 27-30.

Smith, B. B., & Currey, J. (1983). A review of literature on learning and instruction in vocational education. St. Paul, MN: Minnesota Research and Development Center for Vocational Education.

Spitzer, D. R. (1984, September). Why training fails. Performance and Instruction Journal, 23(7).

Sredl, H. J., & Rothwell, W. J. (1987). The ASTD reference guide to professional training roles and competencies (Volume 2). Amherst, MA: HRD Press

Stanton, W. J. (1987) (8th ed.). Fundamentals of buying behavior. New York: McGraw Hill.

Stephan, E., Gordon, E. M., Pace, R. W., & Ralphs, L. (1988, January). HRD in the Fortune 500: A survey. Training and Development Journal, pp. 26-32.

Stolovitch, H. D. (1984, September). Does the criterion match the objective. Performance and Instruction Journal, p. 19.

Sullivan, R. R., & Myers, D. C. (1987, June). Evaluating video based training materials. Training and Development Journal, pp. 82-85.

Swanson, R. A. (1984). The six-step training process. Unpublished manuscript.

Swanson, R. A. (1986). Instructional methods: Training technology system. Unpublished manuscript.

Swanson, R. A. (1987a, Summer). Training technology system: A method for identifying and solving training problems in industry and business. Journal of Industrial Teacher Education, 22(4), pp. 7-17.

Swanson, R. A. (1987b, November). Training technology system bibliography. St. Paul, MN: Training and Development Research Center.

Swanson, R. A., & Gradous, D. (1986). Performance at work: A systematic program for analyzing work behavior. New York: Wiley .

Swanson, R. A., & Gradous, D. (1988). Forecasting financial benefits of human resource development. San Francisco: Jossey-Bass.

Swanson, R. A., & Sisson, G. R. (1985). Training technology system: Abridged edition. Littleton, CO: Paradigm Corporation.

Tobias, S. (1987). Learner characteristics. In R. M. Gagne (Ed.), Instruction technology: Foundations (pp. 207-231). London: Erlbaum.

Trainers size up off-the-shelf and homegrown programs. (1984, January). Training, p. 80.

Tyler, R. (1949). Basic principles of curriculum and instruction. Chicago: University of Chicago Press.

Weiss, D. H. (1987, April). Generic or custom: Choosing a video training program. Sales & Marketing Training, pp. 14-16.

Weick, K. E. (1979). The social psychology of organizing. Reading, MA: Addison-Wesley.

Wenig, R. E. (1978, April). Industrial training methods. Journal of Industrial Teacher Education. 15(4), pp. 45-65.

Westover, C. P. (1983, May). Reflections on training education. Performance and Instruction Journal, pp. 23-24.

What do contract trainers need to know to be successful? [Four by Four Opinion Column]. (1987, April). Training and Development Journal, pp. 26-32.

Wholey, J. S., Scanlon, J. W., Duffy, H. G., Fukumotu, J. S., & Vogt, L. M. (1970). Federal evaluation policy: Analyzing the effects of public programs. Washington, DC: Urban Institute.

Wilson, V. (1985). 99 Seconds: How to do ID--An overview of design. Paper presented at the meeting of the National Society for Performance and Instruction, Chicago.

Wittreich, W. J. (1966, March-April). How to buy/sell professional services. Harvard Business Review, pp. 127-138.

Wlodkowski, R. J. (1985a). Enhancing adult motivation to learn. San Francisco: Jossey-Bass.

Wlodkowski, R. J. (1985b, November). How to plan motivational strategies for adult instruction. Performance & Instruction Journal, pp. 1-6.

Yeres, S. (1986). Learning in the workplace: The N.Y. State Division for Youth. Unpublished manuscript.

Zemke, R. (1983, August). How training's buyers and sellers see each other. Training, pp. 20-26.

Zemke, R. (1983, June). The retail training store: A new approach to finding what you need. Training, pp. 59-62.

Zemke, R., & Zemke, S. (1981, June). Thirty things we know for sure about adult learning. Training, pp. 45-52.